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A STUDY TO DETERMINE A TRAINING PLAN FOR THE MEDICAL RECORDS PERSONNEL OF BROOKE ARMY MEDICAL CENTER IN PREPARATION FOR THE IMPLEMENTATION OF THE DIAGNOSIS RELATED GROUP SYSTEM

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This is a descriptive study to determine a training plan for the Medical Records Department at Brooke Army Medical Center (BAMC) in preparation for the implementation of the diagnosis-related group (DRG) system.

The research methodology used in this study included: personal and telephonic structured interviews of medical records experts; a comprehensive literature review; construction, validation, and testing of a knowledge level survey; administration of the survey; and an analysis of results using descriptive statistics.

The study concludes with a proposed training plan that will reach all BAMC Medical Records personnel. In addition to imparting the necessary information to the Medical Records staff initially, the training plan is designed to sustain the concepts which are taught. The plan parallels the time line of published Department of Defense/Army Medical Department planned activities regarding DRG implementation.

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A TRAINING PLAN FOR THE MEDICAL RECORDS PERSONNEL
OF BROOKE ARMY MEDICAL CENTER IN PREPARATION
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RELATED GROUP SYSTEM

A Graduate Research Project

Submitted to the Faculty of

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In Partial Fulfillment of the

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of

Master of Health Administration

by

Major Stanley J. Illich, MS

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CHAPTER I

INTRODUCTION

The Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982 set the stage for the prospective payment system (PPS). In 1983, Title VI of the Social Security Amendments--Prospective Payments for Medicare Inpatient Hospital Services--was passed, which caused the most significant changes in health care since the inception of the Medicare program in 1965. This legislation established a prospective payment system which replaced the former retrospective cost-based reimbursement system for short-term acute care hospitals. The essence of the PPS is a fixed price per diagnosis-related group (DRG) paid to the hospital for services rendered to Medicare inpatients (Bainbridge and Geib 1983, 64).

According to a special report by the American Hospital Association (AHA), effective with each hospital's fiscal year beginning on or after 1 October 1983, Medicare payment for inpatient services, based on prospective prices, replaced the cost-per-case limits on Medicare payments created by the TEFRA of 1982. Prospective pricing applies to all hospitals except pediatric, psychiatric, rehabilitation, and long-term care facilities. Exempted hospitals are paid on the basis of retrospectively determined costs. Special treatment is provided to facilities which are designated as sole provider community hospitals. Other costs reimbursed retrospectively are capital expenses, direct expenses of approved educational programs,

and outpatient services. DRG payments were initially a blend of local, regional, and national price schedules. Over a four-year period, the blend gravitated increasingly toward the national DRG price schedule with less local and regional influence each year until 1986, when only the national rate was used (1983).

Conditions Which Prompted the Study

According to the literature, Title VI of the Social Security Amendments of 1983 caused hospitals to react in various ways. Almost all departments within the hospital were affected in one way or another. One area which received particular attention before, during, and after implementation of the DRG system was medical records. Averill, Kalison, Sparrow, and Owens point out that special emphasis must be placed on improvement in accuracy and completeness of medical records by hospitals operating under the new system. The authors explain that inaccurate or incomplete medical records hinder the coding process. Problems with coding under the new system will have a direct impact on the financial survival of a hospital (1983, 72).

Flanagan and Sourapas wrote a five-part series dealing with preparation for the prospective payment system by the medical records department. This series of articles focused on what medical records personnel could do to achieve a smooth transition both inside and outside the medical records department during the implementation of DRGs. The authors suggested that the process of

educating the hospital staff be initiated by the medical records department (1983a and b; 1984a, b, and c).

Current organizational theory suggests that the success or failure of a particular organization is dependent upon how well that organization responds to its environment (Principe, Foster, Illich, and Wong 1987). Large organizations, such as the Army Medical Department (AMEDD) and, in particular, Brooke Army Medical Center (BAMC), are affected by external environmental influence. The change in environment represented by the pending shift from a cost-based to a prospective payment system based on DRGs will have dramatic impact on the AMEDD and BAMC.

Until recently, Army hospitals have been sheltered from the implementation of a prospective payment system. However, evidence indicates that Congress is looking for ways to lower federal health care spending and alteration of the current system of resource allocation used by the AMEDD may be too tempting to resist. If environmental forces, such as the implementation of the DRG system, are not managed proactively, it is possible that the Army Medical Department could find itself stripped of all but the wartime medical mission (Principe et al. 1987).

Implementation of the DRG system by the AMEDD has been directed by Congress. Thus, planning and preparation in anticipation of this change in the external environment must begin immediately. As a first step, it is imperative that the AMEDD plan to train key people as soon as possible.

With increased environmental pressure to cut health care costs, House Resolution 4428 was introduced in the House of Representatives on 18 March 1986. This legislation was introduced to authorize Armed Forces appropriations for Fiscal Year 1987. Section 1099 directs the Secretary of Defense to establish the use of DRGs for the allocation of resources by the military medical departments as follows:

> (a) ESTABLISHMENT OF DRGs.--The Secretary of Defense, after consultation with other administering Secretaries shall establish by regulation the use of diagnosis-related groups as the primary criteria for allocation of resources to facilities of the uniformed services.

> (b) CONTENT OF REGULATIONS.--Such regulations shall establish a system of diagnosis-related groups similar to that established under section 1866(d)(4) of the Social Security Act (42 U.S.C. 139ww[d][4]). (United States [US], Cong., House, Com. on Armed Services 1986, 147)

Initially, Congress expected the inpatient area to come under the DRG system on 1 October 1987, with the outpatient area following on 1 October 1988. Because of the complexities of meshing the civilian DRG system with the peculiarities of the military, there is speculation that a phased implementation will be necessary. The conversion of the civilian DRG system to one which is applicable to the military is not expected to be accomplished until the early 1990s (Baker 1987).

The military is facing a situation similar to the one faced by the civilian community in 1982. When the DRG system was thrust upon the civilian sector, the law and the subsequent regulations were seen as complex and confusing. It appeared that the civilian sector was not fully prepared to meet the challenge. However, the challenge was met and the system implemented. The prospective payment system based on DRGs is now fully functioning in the civilian sector and is certain to proliferate to other sections of the health care industry.

The Veterans Administration (VA) DRG system is likely to be an even better model for the military hospital. Because the VA hospital is a part of the federal sector, methods used by the VA are likely to be more adaptable to the military hospital than civilian sector methods. It is also pertinent that the VA uses the DRG system to reallocate resources rather than for reimbursement, as is the practice in the civilian community (VA 1986, 5). The military hospital will likely reallocate resources in the same manner as the VA. The military has an advantage in that it has the experiences of PPS implementation in the civilian sector and by the VA from which to draw. Successes and failures of the civilian sector and the VA should be studied, similar mistakes avoided, and successes emulated.

The military services are currently developing the methodology to link DRGs with funding of military health care operations. Many problems face the military, including development of a new method of accounting, restructuring of the budgeting process, and formulation

of a reporting system which will be compatible with the DRG system (Olson 1987). The AMEDD should eventually overcome these difficulties and, through the implementation of DRGs, achieve a degree of success in cutting costs similar to that achieved by the civilian community.

When the system is in place, DRGs will be the primary criteria for the allocation of resources to facilities of the Uniformed Services (US, Cong., Senate 1987). This will enable the military to carry out the intent of Congress that DRGs be used as a cost-cutting measure and a means of facilitating cost comparisons with civilian facilities (US, Cong., House, Com. on Armed Services 1986).

Should this system of resource allocation be implemented by the military as scheduled, the AMEDD and, in particular, BAMC will face problems similar to those experienced in the civilian sector. BAMC must be prepared for diagnosis-related group implementation. A key factor in the initial preparation plan is the development of a training plan for medical records personnel. Such a plan or model would be useful regardless of the manner in which DRGs are finally implemented by the Army Medical Department.

Problem Statement

The problem was to determine a training plan for the Medical Records personnel of Brooke Army Medical Center in preparation for the implementation of the diagnosis-related group system.

Objectives

The objectives of this study were to:

1. Review current literature concerning the methods employed by hospitals to train medical records personnel before, during, and after the implementation of DRGs and note the problems and successes encountered during this training. This review included Department of Defense (DOD), Department of the Army (DA), AMEDD, and Health Services Command (HSC) materials.

2. Determine from the literature review a consensus as to the content of training necessary to prepare the medical records department for the implementation of the DRG system.

3. Conduct personal and telephonic interviews with medical records experts from the Texas Medical Record Association, the American Medical Record Association, the Texas Medical Foundation, and the AHA to determine a consensus on the content of training necessary and the methods which should be used to prepare the medical records department for the implementation of the DRG system.

4. Select six civilian hospitals and study the methods used by the administration of these hospitals to train their medical records personnel during and after the implementation of DRGs.

5. Study methods used by the local Veterans Administration hospital to train its medical records personnel during and after the implementation of DRGs.

6. Analyze methods used by each selected hospital to train medical records personnel and determine the lessons learned, the

mistakes made, and the successes achieved.

7. Determine, from civilian and VA inhouse medical records experts in each selected hospital, what must be taught and which method should be used to train medical records personnel to successfully implement DRGs.

8. Determine the current level of knowledge of the DRG system held by the medical records personnel expected to implement the system at BAMC.

9. Using information gathered from a review of the literature, civilian inhouse and professional organization expert recommendations, VA inhouse medical records expert recommendations, and a knowledge level survey administered to the BAMC Medical Records staff, formulate a training plan for the Medical Records Department at BAMC.

10. Describe a training plan for Medical Records personnel at BAMC as part of the implementation of diagnosis-related groups into the military health care system.

Criteria

The criteria for this research included the following:

1. A successful training plan must reach all Medical Records personnel over a specified period of time.

2. In addition to imparting the necessary information to Medical Records personnel initially, the training plan must sustain the concepts which are taught.

3. The training plan must make use of those teaching methods which have proven most successful.

4. An ongoing feedback mechanism must be included.

5. Any proposed training plan must parallel the time line of DOD/AMEDD-planned activities regarding DRG implementation.

Assumptions

For the purposes of this research, it was assumed that:

1. The Army Medical Department would initially implement a DRG system similar to that used by the civilian sector and the Veterans Administration.

2. The inhospital and organizational medical records experts contacted would agree to freely share their respective training plans.

Limitations

The following limitations impacted on this study:

1. The scope of this study was limited to an analysis of the training plans, models, and procedures used by the local Veterans Administration hospital and six civilian hospitals, a comprehensive literature review, the recommendations of experts in the field, and the findings of a knowledge level survey.

2. The study was restricted to data gathered between 22 February 1988 and 8 April 1988.

Review of the Literature

The concept of diagnosis-related groups was developed by a group of researchers at the Yale University Center for Health Studies in the late 1960s. This system classifies patients and assigns them to homogeneous categories. Each category is represented by a DRG code. The assigned code is an exact translation of the diagnosis and is based on principal diagnosis, operating room procedure, age, sex, complications, and co-morbidities. The DRG code represents a medical condition. Under the DRG system, it is assumed that patients with similar medical conditions will use similar types and amounts of medical care, thus consuming similar amounts of resources (Hartzke 1983, 1, 15).

Theoretically, the output or product of a hospital can be measured using the DRG system. If this theory is proven and the system is successful in measuring the output or product of the hospital, the health care product can be defined and measured. Further, if health care is defined as a product, payers can purchase health care using the same methods they use to purchase other kinds of products. This concept is very appealing to the Federal Government (Hartzke 183, 1, 15).

From the beginning, the proposed goal for the implementation of DRGs has been to increase hospital efficiency by placing the hospital at risk. It was hypothesized that, as hospitals pushed for greater efficiency, the cost of health care would decrease. If the hospital is able to provide health care efficiently, there is

potential for financial benefit; if not, the hospital is financially at risk (Iglehart 1986, 1461).

DRGs Become Pervasive

As recently as 1985, there was speculation that prospective pricing systems for medical care based on diagnosis-related groups would become the norm for the entire health care industry (Crawford and Fottler 1985, 73). However, during the early stages of implementation in the civilian sector, there were many who scoffed at the idea of a DRG system for reimbursement or resource allocation. Even today, doubt persists. Before the end of 1984, however, four states were using the DRG system almost exclusively and others were poised to follow (Grimaldi and Micheletti 1985, 13).

Sectors of the Department of Defense have also adopted a prospective payment system based on DRGs. A DRG case-mix model that measures and redistributes acute care resources has been in use by the Veterans Administration since 1985 (VA 1986, 5), and the military medical departments have been tasked by Congress to put a similar system in place for inpatients beginning on the First of October 1988 (Baker 1987).

The DRG system is not touted as perfect; hence, reasons for its proliferation are speculative. The literature is replete with examples of criticisms leveled at the deficiencies inherent in the system (Horn 1983, 49). Many espouse the theory that the DRG system has become popular because it is relatively easy to understand and

happened to be at the right place at the right time (Crawford and Fottler 1985, 73).

The adage that history repeats itself can be illustrated by tracing the evolution of DRGs. In 1982, the Federal Government was desperately searching for a method to slow the rise in the cost of medical care, which was increasing three times faster than the overall rate of inflation. It was clear that the retrospective method of payment in place at that time, with its lack of incentives to control costs, had to be replaced with a system that encouraged efficiency rather than uncontrolled spending (Averill and Kalison 1983, 22).

This writer has heard similar statements made by colleagues concerning the lack of incentives for efficiency in the military system of resource allocation. Evidently, the AMEDD is in much the same situation as the civilian community was in 1982. The implementation of some variation of the DRG system seems to be eminent. A closer look at the history of the birth of DRGs in the civilian sector may assist the military medical departments in their preparation to implement DRGs.

The AMEDD must also consider the implications of not implementing the DRG system. If the system should prove to be inefficient, it will fail. Should the system fail, however, it is likely that another system or mechanism will take its place (Crawford and Fottler 1985, 81). It seems reasonable that the AMEDD would proceed with at least a modification of the DRG system currently used for

Medicare reimbursement.

A review of the literature from 1982 to the present revealed the significance which the DRG system has achieved. When the government was initially searching for a means of cost containment, several methods were considered. The DRG system was not the only case-mix system examined during that time. There were at least nine such systems in existence in 1983. Plomann and Shaffer, in an article published in Nursing and Health Care, list nine approaches to the case-mix system transition. Of the methods available at the time, the Federal Government chose the DRG system because it was easy to implement expeditiously. Cost-cutting was a near emergency task and the DRG system was available (1983, 438).

Civilian Reaction to DRGs

Civilian hospitals reacted in different ways to DRG legislation. Some hospitals did virtually no planning and made very little preparation. Others established a DRG committee and/or a DRG coordinator, who was charged with planning for and implementing the new system. There were efforts to educate the hospital staff, and productivity, efficiency, and automated data-processing were catchwords of the day (Wallace 1983, 26).

It is noteworthy that one area received particular attention before, during, and after implementation of the DRG system--medical records. Averill, Kalison, Sparrow, and Owens point out that hospitals, under the new system, must place special emphasis on

improving accuracy and completeness of medical records (1983, 72).

Military DRGs

Findings reflected in a study by Rieder and Kay in 1985 indicated that DRGs explained significantly more of the total variation in length of stay for patients at naval hospitals than other grouping techniques being used at that time. DRGs accounted for about 25% of the total variation in patient length of stay. This percentage was statistically significant. In contrast, DRGs explained 43% of the variation in length of stay in the civilian community. The figures from this study indicate that the DRG system used by the civilian sector explains sufficient amounts of variation to be considered suitable for use by the military. However, the system will have to be tailored to the peculiarities of the military.

Womack and Fleming suggest that the military should examine the prospective payment system based on DRGs. The authors contend that incorporating the DRG system into military medical departments will theoretically provide a common measurement among all hospitals-- military, civilian, and VA. The Federal Government would then be in a favorable position to contract with the least expensive hospital product provider. Competitive bidding may become commonplace. There is some indirect concern that the goals of the DOD could be subverted by the system (1986). This concern is aptly illustrated by the statement: "The case for using DRGs to support the mission must be made before a case which will subvert the mission is

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stated" (1986, 382).

Impact of Accurate Medical Record

Presently, the AMEDD finds itself in much the same position and posture as the civilian sector was just prior to the implementation of DRGs. Planning was associated with long-range issues such as case-mix analysis and physician practice patterns, the most attractive and most glamorous areas of investigation. These subjects were popular then and will undoubtedly be the most popular areas of investigation as the implementation of DRGs in the military health care system proceeds.

Admittedly, the study of case-mix analysis and physician practice patterns is essential. However, planning in these areas does not address the immediate needs each institution will face during the initial stages of implementation. Those immediate needs are to insure a correct and timely flow of information for each admission and the legally and ethically correct DRG assignment to provide appropriate resource allocation to each department.

Protecting the hospital's financial position under the DRG system is a team responsibility and medical records personnel are uniquely qualified and positioned to assist the military hospital in meeting this challenge as an integral player on that team. The medical records section handles the "nuts and bolts" of the system and, therefore, must be a featured player (Flanagan and Sourapas 1983b, 20, 22).

In their unpublished study, Brueland, Illich, and Evans found that the single most important lesson learned in the implementation of DRGs was the significance of accurate and complete medical records. The methodology of the study involved collecting data using structured interviews of key professionals in the hospital. Administrators, physicians, nurses, medical records personnel, and information management specialists from four hospitals in San Antonio, Texas, were interviewed. The data from these interviews were subjected to a content analysis. Findings indicated that only the medical records staff received specialized training during implementation of the DRG system. This study also revealed that most communications dealing with DRGs during the implementation phase originated in the medical records department (1987, 10, 19).

Physician-Medical Records Cooperation

It has been suggested and is argued in the literature that the physician, in fact, assigns the DRG. Superficially, it would appear that the physician, by assigning the principal diagnosis, does indirectly assign the DRG. However, in reality, there is normally a sequence of events that establishes the DRG grouping (Grimaldi and Micheletti 1983, 28).

To initiate the process, the physician records the principal diagnosis and other items of information in the medical record. Medical records personnel then review this information very closely, taking into account the entire medical record. If there are no

problems, the indicated DRG is assigned. In many instances, however, information is omitted, recorded in error, and/or improperly sequenced or the physician just needs the assistance of medical records personnel. Administrators of hospitals which have experienced the transition to the DRG system have taken note of these problems. In an effort to avoid similar problems and to seek a secure financial position to the maximum extent possible, administrators are delegating the responsibility of DRG grouping to medical records personnel. For example, the administrator of nearly every hospital in New Jersey delegates the responsibility of assigning patients to DRGs to medical records personnel (Grimaldi and Micheletti 1983, 28).

Cooperation between the physician and the medical records department is essential. The intent of medical records department personnel is not to tell the physician how to practice medicine; rather, the medical records specialists must function as advisors to the physician. All those involved must understand that the physician alone is responsible for the diagnosis. It is also well established and, once again, all players involved must understand that there must be improvements made in the completeness and the accuracy of medical records to make DRGs work in a manner compatible with the financial viability of the hospital. In any case, cooperation between physician and medical records personnel is necessary to insure accuracy and completeness of the process (Grimaldi and Micheletti 1983, 29).

New Role of Medical Records

Coded inpatient data being used by the AMEDD for research, quality assurance studies, and statistical output will become the primary focus in medical records departments when DRGs are implemented by the military. Accuracy of the coding function could well mean the difference between financial success or failure of the individual military hospital. The completeness, the timeliness, and the accuracy of the information reported, the diagnosis and procedures reported, and the coding will also likely have major impact on the share of allocations received by each hospital (MacDonald 1983, 55). The medical records department, which has been viewed in the past as a cost generator, will be viewed as a revenue producer in the future. As hospital administrators realize the potential of medical records to maximize hospital resources, the role and the scope of the medical records department are likely to increase (Nathanson 1983, 50-51).

Currently, the AMEDD receives funds appropriated by Congress for the next fiscal year based on the previous year's obligations. In the present system, there is no reliance on medical records for resource allocation. With the advent of the DRG system, however, the amount of resources allocated to each hospital, and, indeed, each department, may ultimately depend on specific information coded by medical records personnel. Coding which is untimely or inaccurate will jeopardize the hospital's financial stability. Reflecting on this key point, some cases can be seen in the civilian sector

where the medical records department has been placed under the direction of the administrator for finance (Grimaldi, Micheletti, and Zipkas 1983).

Increased emphasis on the medical records department will likely elevate the stature of these personnel (Kovener and Palmer 1983, 44). The work of medical records personnel will likely become more enriching and larger in scale. The practice will become more enriching in the sense that more employees will assume much more responsibility and greater autonomy. Simultaneously, the sheer volume of work will increase (Bennett 1984). The changing role of hospital medical records staffs will create a demand for new training and an increase in educational requirements.

Knowledge Needed to Meet the Challenge

It will likely become the responsibility of the medical records department, either through planning or by default, to educate the medical staff and the administration/management. A medical records staff that has been trained will be in an excellent position to take the lead, not only in education but also in other ways. In the field of automation, which will certainly evolve very quickly in response to DRG implementation, the medical records department should have a role in selecting, acquiring, and implementing hospital information systems (Flanagan and Sourapas 1984a, 11).

Literature describing the knowledge required by the medical records department to implement the DRG system is scarce. It is

accepted, however, that the medical records department must be one of the first to be indoctrinated. For example, in the book _Physician's Guide to DRGs_, edited by Robert Shanko, there is a list of suggestions for a smooth transition to the DRG system. One of those suggestions is: "Make sure our medical records department is fully trained and geared up for DRGs" (1983, 214).

Medical records personnel must study and learn the language used in the DRG system. They also must familiarize themselves with the DRG grouper manual, which is a list of ICD-9-CM codes that qualify patients for different DRGs. In addition, coders must learn when and how manifestation and V codes are used to assign patients to DRGs. Separate listings of the allowable operating room procedure codes and complications and co-morbid condition codes must be studied as well. Medical records personnel must also be aware of the main parameters of patient classification under DRGs (Grimaldi and Micheletti 1983, 57-58). Grimaldi and Micheletti list the main parameters of patient classification under DRGs as:

1. Operating Room Procedure

2. Principle Diagnosis

3. Age of Patient on Admission

4. Sex of Patient

5. Complication/Comorbidity

6. Secondary Diagnosis (1983, 58)

In addition to the general education required by all medical records personnel, coding personnel will need further technical

training. For example, a fully qualified coder must know medical terminology and basic anatomy and physiology. Ongoing education is essential to enhance the technical and the clinical expertise of the coding staff (Grimaldi and Micheletti 1985, chap. 4).

The American Medical Record Association (AMRA) has issued a position statement concerning coding competency. This statement lists 15 tasks which a competent coder must accomplish and offers a sample of the association's philosophy. The AMRA position statement describes coded data as the foundation that supports health care planning, reimbursement, and clinical program evaluation ("Position Statement" 1987).

Medical records personnel should be indoctrinated in both the overall and the specific aspects of the system. A well-trained medical records department can be an excellent resource for the hospital. For example, Annis points out that the task of organizing DRG education programs should be the responsibility of the director of medical records (1984, 52). His opinion is not an isolated one, as many other authors (e.g., Flanagan and Sourapas 1984c; Fox and Joseph 1983) also endorse the theory that medical records departments should be one of the principal educators of the entire hospital staff, particularly in training for DRG systems and implementation programs.

Training Methodology

Before implementing the DRG system, the administrative staff of

each hospital must decide how they want to train their personnel. The effectiveness of this training will determine the smoothness of the transition from retrospective to prospective methods of resource allocation.

Historically, some hospitals have established a DRG committee. Others have appointed a DRG coordinator, while some have combined the two approaches. Many of these committees and coordinators were tasked with the responsibility of educating the hospital staff. Often, the person appointed either to manage the DRG committe or as the DRG coordinator was the medical records administrator ("Ranks of DRG Coordinators" 1985).

The literature describes the use of large assemblies, targeted instruction, video presentations, lectures, and seminars. Many hospitals have simply used the professional and the administrative communication channels already in place to disseminate educational materials and effect changes in the system as they occur. Professional organizations, such as the AMRA, have sponsored educational experiences; state associations have done likewise. The Veterans Administration has recorded a series of six videotapes to educate its many staffs on the transition to the DRG system (Brueland et al. 1987, 10).

Regardless of the initial methods used to educate the medical records staff, a system of continued competency must be in place. This continuing education is probably best accomplished through periodic evaluation and inservice sessions. These inservices may be

conducted by inhouse instructors or by consultants from outside the hospital. Continuing competency may also be tied in with the quality control system used by the medical records department (Grimaldi, Micheletti, and Zipkas 1983, 29).

To maintain the highest standards, it will be necessary for the medical records department to establish quality control procedures that insure the accuracy of record analysis, coding, and consistency of solutions to judgmental DRG assignments. One method which may be used to satisfy both the continuing competency and the quality control requirements is suggested by Grimaldi, Micheletti, and Zipkas. These authors advocate requiring coders to undergo monthly peer reviews that involve a second coder. Quality control problems could be resolved promptly, and continuing education inservices could be scheduled that would key in on identified problems (1983, 29).

Summary and Conclusion

The introduction of the DRG system in 1983 had a phenomenal impact on the health care system in the United States. Rising health care costs, combined with other environmental factors, made the situation right for the implementation of some form of cost containment. The DRG system, which was being developed by Yale researchers at that time, was an evolving system but was far enough along in its development to make implementation practical.

Civilian hospitals suddenly found themselves transitioning to a

new system which was mandated by law and enforced by Health Care Financing Agency regulations. There were some progressive thinkers who had their hospitals prepared, but, for the most part, hospital administrators did not plan for DRGs.

A review of the historical literature highlights the medical records department as a vital cog in planning, preparation, and implementation of the DRG system. The medical records department is involved in the basic building blocks of the DRG system. This department is considered by many to be the foundation upon which the DRG system can be built. In any case, it is certain that a prospective payment system based on DRGs will not function without competent medical records personnel.

An educated medical records staff can have substantial impact on the accuracy of medical records, the development of automation, the education of the hospital staff, and, most importantly, the financial viability of the hospital. Discussions in the literature of methods and content of training for the medical records staff during the implementation of DRGs in the civilian sector are sparce. One goal of this study was to add new knowledge and greater structure to the existing pool of information in the area of training medical records personnel.

No evidence could be found that a knowledge level survey was administered to the staff of any medical records department to determine the baseline knowledge of the medical records staff prior to the implementation of a training program. A second goal of this

study was to construct such a survey, test it, and administer it to BAMC Medical Records personnel. The results of this survey were used to further highlight the depth of information which must be imparted to the BAMC Medical Records staff to insure as smooth and as efficient a transition to the DRG system as possible.

In conclusion, the writer was unable to find anything in historical or current literature that indicated that a specific study had ever been done to determine a training plan for medical records personnel. Therefore, this review has concentrated on those sections of books and selected journal articles which have direct application to this study.

Research Methodology

In the conduct of this study, the following research methodology was used:

1. Available literature, both military and civilian, dealing with DRGs, to include that which is currently being developed by military medical departments, was reviewed. Special emphasis was placed on literature dealing with the training of medical records personnel.

2. Existing HSC, DOD, DA, and BAMC directives, memoranda, and instructions concerning DRGs were reviewed.

3. Telephonic interviews were conducted with medical records experts from the Texas Medical Record Association (TMRA), the Texas Medical Foundation, the Texas Hospital Association (THA), the AMRA,

and the AHA. The purpose of these interviews was to gather a consensus of expert opinion as to the content and the method of instruction necessary for implementation of the DRG system by medical records personnel.

4. Six local civilian hospitals were selected for review of the implementation of the DRG system. For this study, these hospitals were selected based on their similarity to BAMC with reference to size (operating beds).

5. Telephonic contact was made with the administrator of each hospital to obtain permission to interview the inhouse medical records information expert.

6. A structured interview was constructed based on a historical review of the literature.

7. A review of the structured interview by an expert at the Academy of Health Sciences was conducted to validate the interview.

8. Structured interviews with key medical records personnel were conducted in each of the six civilian hospitals and the local Veterans Administration hospital. The inhouse expert in the field of medical records, as determined by the chief executive officer of each hospital, was questioned. Questions used in the structured interview focused on four areas: (a) responsibility for training, (b) planning for training, (c) methods used to train, and (d) content of instruction.

9. A content analysis of the results of these interviews was performed to determine the methods used by administrators of

selected hospitals to plan for and train medical records personnel.

10. A survey was constructed to determine how much BAMC Medical Records personnel know about the DRG system prior to its implementation. Survey questions were based on comprehensive review of the literature, recommendations of experts from national and state organizations, and results of inhouse expert interviews from the selected civilian hospitals and the local Veterans Administration hospital.

11. Administration of this survey to Medical Records personnel at Wilford Hall Air Force Medical Center served as a pretest. This pretest served to determine whether or not the questions were understandable and if they measured what was intended to be measured.

12. The knowledge level survey was next administered to BAMC Medical Records personel.

13. The results gathered from the knowledge level survey were analyzed using appropriate descriptive statistics. Areas which needed emphasis were identified based on this analysis.

14. The recommended methods of training medical records personnel and content of instruction necessary to prepare for the implementation of DRGs derived from the comprehensive literature survey, the telephonic interviews of state and local organizations' experts, and the structured interviews of inhospital medical records experts were studied. These recommendations were compared with the level of expertise revealed by the knowledge level survey administered to BAMC Medical Records personnel. This comparison

illustrated the shortfall in the existing knowledge level of BAMC Medical Records personnel versus what medical records experts felt the knowledge level should be.

15. A training plan was developed which may be used to make up the knowledge level shortfall (described as necessary by experts) and the existing level of knowledge (as demonstrated by the knowledge level survey administered to Medical Records personnel at BAMC).

16. The results were presented and recommendations made to the Chief of Staff, BAMC.

17. All documents, journals, interviews, and books were referenced.

CHAPTER II

DISCUSSION

In order to determine a training plan for Brooke Army Medical Center Medical Records personnel, medical records experts in seven hospitals in the city of San Antonio were questioned using structured interviews (see appendices B and C). Telephonic structured interviews of national and state medical records experts were also conducted (see Appendix D). The knowledge gained from these interviews and a comprehensive review of the literature were used to construct a knowledge level survey. This survey was then used to test the knowledge of DRGs possessed by BAMC Medical Records personnel. Finally, a training plan was developed which was expected to make up the shortfall in the knowledge of DRGs currently possessed by BAMC personnel and that cited as necessary by medical records experts and the literature.

Originally, three for-profit hospitals, four nonprofit hospitals, and one VA hospital were selected for this study. All of the hospitals are in the city of San Antonio. Two of the for-profit hospitals are under the same corporation. Responses from these two hospitals were so similar that only the results from the largest hospital were used, leaving only seven hospitals as participants in the study. The four nonprofit hositals were represented by three different religious denominations and a county hospital (see

Appendix E).

Hospital Medical Records Experts

Structured interviews were constructed to gain a historical perspective of the civilian sector and the Veterans Administration training experience during the implementation of the DRG system. In addition, questions asked were designed to elicit methods of training in use today. Queries were structured to gain information in four areas: (1) responsibility for training, (2) planning for training, (3) methods used to train, and (4) content of instruction.

Questions were directed to the medical records expert in each hospital. In all hospitals visited, the expert, as determined by the chief executive officer, was the medical records director, with the exception of Baptist Medical Center Hospital (BMCH). BMCH does not use medical records as the primary building block to implement DRGs. Instead, BMCH has established an institutional review coordinating system (IRCS), headed by a registered nurse. The person interviewed from BMCH, therefore, answered the interview questions differently in every case, except for content of training. The approach taken by BMCH indicates that the use of the medical records department as the primary building block in the implementation of DRGs is not the only successful method available.

Responsibility for Training

In all but one instance, the director of medical records was

responsible for training medical records personnel for the imple-
mentation of the DRG system. Medical records personnel working for
BMCH were left out of the process of planning for the implementation
of DRGs. With the advent of Medicare and the DRG system, the
Medical Records Department at BMCH was relegated to being used only
as a service. As mentioned in the preceding paragraph, a separate
section, the IRCS, was established to handle DRGs. At Humana Hos-
pital, responsibility for training is shared by the local medical
records director and the corporate DRG consultant. Similarly, the
local medical records director of the Veterans Administration also
shares responsibility with the regional staff.

Planning for Training

Overall, planning for the training of medical records personnel
for the implementation of DRGs was not particularly strong. Medical
records directors who had responsibility for training did some
planning. However, planning was not extensive. Several medical
records directors commented that the time from notification to
implementation of the DRG system was too short to initiate any
meaningful planning.

Only at Humana was a knowledge level survey administered to
workers. Humana also benefited from the work of a corporate-level
medical records consultant who conducted corporate-level planning
for the training of medical records personnel.

The VA did very little planning at the local level; however,

some planning was accomplished at the regional level. Sepcifically, one of the six videotapes prepared by the VA was directed toward medical records.

None cf the respondents in this sample used the services of an outside DRG consultant for planning or training. Medical records directors in general believed that they had enough expertise inhouse to handle the training of their staff.

Training Methodology

All inhospital medical records experts stated that on-the-job training (OJT) was the method of choice to train medical records personnel for implementation of the DRG system. All hospitals used OJT during implementation and the use of OJT as a training method persists today. The use of OJT for training new personnel and for continuing education training is common practice in all the medical records departments surveyed.

Two respondents mentioned that one method of insuring knowledge of DRGs is to hire only accredited records technicians (ARTs) and registered records administrators (RRAs) because they have been trained in subjects pertinent to the DRG system. Another respondent suggested that, if one could not hire an ART or an RRA, the employee who is hired should have extensive experience with the DRG system.

Other methods of training mentioned by hospital medical records experts were seminars, workshops, and national, state, and local association publications. It was interesting to note that all

respondents recommended, as an important method of teaching medical records personnel, the review of past and current literature.

The respondent from Santa Rosa Medical Center (SRMC) suggested the Texas Medical Foundation (TMF) as a source of training. The TMF will tailor its prepared instruction modules to the needs of the requesting hospital. This suggestion sounded as though it would be an efficient and economical method for training medical records personnel. In direct opposition to this suggestion, however, the medical records expert from BMCH expressed the belief that workshops and seminars sponsored by outside experts dispense incorrect information.

The respondent from Southwest Texas Medical Center feels that it is valuable to use teleconferences to teach medical records personnel. These sessions were commonplace in the early years of the Medicare DRG system and might be a useful tool if used properly by the DOD/AMEDD.

The Director of Medical Records, VA, stated that civilian seminars, workshops, and publications are not used by the VA. The systems used by the civilian sector medical records experts are so different from the VA system that such information only serves to confuse VA medical records employees. Further, information obtained from national and state organizations has been of limited usefulness to the VA for the same reason.

The study of videotapes as a method of training medical records personnel was applied with some success by Humana and the VA during

the implementation of DRGs. Some of the medical records experts interviewed, however, claimed that this method of training is limited because there is no interaction between the source of instruction and the employee-learner.

With the exception of BMCH, all inhospital medical records experts interviewed responded that medical records personnel were the first to be trained in their respective hospital. The respondents explained that medical records personnel were trained first so that they might be better prepared to answer questions and train the rest of the hospital staff. All those questioned, except the respondent from BMCH, indicated that they first trained the medical records section as a group and then provided more intensive training for coding personnel.

In contrast to the others, BMCH hired two managers who were experts in the fields of coding and utilization review to train its staff (IRCS). After the IRCS staff was trained, then medical records personnel were trained.

Continuing education methods suggested by respondents were similar to primary education methods. The only exception to this was the suggestion made by the medical records director of SRMC. She suggested the adoption of a practice used locally during the implementation of DRGs. The medical records director at SRMC explained that she would ask physicians to come in and speak to medical records personnel about their specialty. The understanding of physiology gained from these lectures helped the coding staff,

and the physician, in turn, was taught the intricacies of the DRG system. Trading educational experiences with the physician is especially appealing.

Content of Instruction

Suggestions and recommendations on the subject of instructional content received from inhouse medical records experts were as follows: definitions, acronyms, meaning of DRGs, explanation of retrospective payment versus prospective payment, impact on the institution, specific training for coders, computer training, materials from national and local associations, and methods to maximize reimbursement.

Recommendations on content of instruction were uniform except for the suggestion on training medical records personnel on how to maximize reimbursement. This suggestion was not mentioned by the nonprofit hospital respondents; however, it was suggested by the medical records directors of the two for-profit hospitals.

The DRG learning experience for the civilian sector and the VA appears to have been incremental. As new information became available and the importance of the DRG system to the financial viability of the hospital was realized, the content of instruction changed. One lesson may be learned by military treatment facilities from the VA experience: The DRG system used by the VA has been altered so extensively that in many ways it does not resemble the system used by Medicare, from which the VA system was originally modeled. One

may expect that the DOD/AMEDD will certainly tailor the proposed system to fit the military treatment facility's idiosyncracies. Thus, the AMEDD must be prepared to teach changes to the system as they occur.

National and State Organization
Medical Records Experts

Medical records experts from the AHA, the AMRA, the THA, the TMRA, and the TMF were interviewed telephonically. An effort was made to contact the most knowledgeable medical records staffer in each organization. The text of the telephonic interview was a shortened version of the one used to interview inhouse hospital medical records personnel. It should be noted that, when the THA was contacted, the respondent (from Medical Records) indicated that she had had little experience with DRGs and that no one in any of the THA's offices at that time could do justice to questions about the training of medical records staff for implementation of DRGs.

Responsibility for Training

National and state organization medical records experts were in agreement that, historically, the responsibility for planning for training the medical records department belonged to the director of medical records in all but the large hospitals. It was mentioned that, in a large medical center, this responsibility might have fallen on the assistant director of medical records.

The representative interviewed from the TMRA felt that responsibility for training fell on the shoulders more of national and state associations than of local directors of medical records. This view is understandable because both national and local medical records associations were very active in accepting responsibility for planning the training for medical records staffs in the early years of DRG system implementation.

Each organizational expert expressed the view that responsibility for training medical records personnel is the same today as in the past. The only exception was a comment by the expert representing the AMRA, who stated that some responsibility for training medical records personnel in the field of DRGs today is done by finance department representatives. So much of some hospitals' financial well-being depends on accuracy of the medical record when dealing with DRGs that this seems to be becoming commonplace.

Planning for Training

Except for the respondent from the TMF, each organizational medical records expert identified the medical records director as the person most responsible for planning both historically and currently. Two experts mentioned the desirability of input from coding personnel.

The expert from the TMF reflected on the history of DRG implementation and expressed the opinion that training for medical records personnel was not well planned. She alleged that no one

knew much about DRGs during the early stages of implementation; thus, training was not well planned at any level. This statement aligned well with other statements made by inhospital medical records experts.

A question concerning the use of a consultant to advise on the subject of training of medical records personnel evoked mixed emotions. All experts interviewed held the opinion that the use of a consultant was and is a judgment call. One expert stated that, if the hospital was small and did not have the inhouse resources, a consultant might have to be used. Another said that, if the medical records department is strong, a consultant would not be necessary; however, if the department was weak, a consultant might be needed. When the decision is made to use a consultant, experts recommended caution in making the choice. Respondents commented that some alleged consultants may lack expertise, especially in the unique aspects of a particular DRG system.

Training Methodology

National and state organization medical records experts indicated that, historically, seminars, videotapes, and workshops were the methods most commonly used to train hospital medical records personnel. Other methods offered by these experts included satellite conferences, workbooks, and professional journals. All agreed that the seminar and, especially, the workshop are excellent methods to train medical records personnel. Further, it was suggested that,

whatever method is used, there must be opportunity for two-way communication between the instructor and the student. The lack of this two-way communication was cited by one expert as a primary reason why videotapes should not be used. Inservice presentations on areas of weakness and new developments was the favored method of continuing education of all of the organizational medical records experts interviewed. These experts also emphasized the fact that the student must be placed in a situation where the lessons learned may be put to use as soon as possible.

Content of Instruction

All national and state organization medical records experts believed that there is a necessity to train medical records personnel in the area of general knowledge and concepts as a first step to insuring the smooth implementation of the DRG system. Other areas mentioned were DRG computer software, impact on the hospital of DRGs, coder-specific tasks, and importance of understanding the system which is eventually adopted by the AMEDD. Other areas of training which were mentioned were the previous payment system versus the new PPS system and the rationale for developing and using a DRG system. Two of the organizational experts interviewed made the point that those medical records personnel who are involved in coding records would need to be trained in the subjects of medical terminology, anatomy and physiology, and disease processes. They stated further, however, that ARTs and RRAs are taught these

subjects in school and should require only minimal training, if any at all.

Suggestions from the Literature

Responsibility for Training

There is mention of responsibility for the training of medical records personnel in preparation for the implementation of DRGs in the literature. However, specific reference to responsibility for the training of medical records personnel is sparce.

Planning for Training

A really good discussion on planning for training medical records personnel, or personnel of any other section of the hospital, before or during the implementation of DRGs was not evident in the literature. It appears that there was some advance knowledge that PPS was on the horizon and that the system chosen might be the DRG system. However, it was not anticipated that the implementation of a prospective payment system would be put into effect so quickly. The time from the announcement of the system to its implementation was very short for some hospitals. For the most part, it appears that there was very little time to plan training for medical records sections.

Medical records training was usually wrapped up in the hospital plans for DRG training. Historically, DRG committees were set up to accept this responsibility. Usually, these committees were composed

of the hospital administrator, the medical records administrator, the controller, and selected representatives from the professional staff. In some hospitals, a DRG coordinator rather than a DRG committee was appointed. In either case, the DRG committee or the coordinator was charged with the responsibility for planning and implementing the DRG system. In many cases, the person appointed as the DRG coordinator was the medical records administrator.

Training Methodology

The literature contains descriptions of DRG training used by civilian hospitals in preparation for implementation of this system. Examples of methods used are: large assemblies, video presentations, lectures, and seminars. The literature also describes the use of those channels of communication already in place in the hospital. For example, an introduction to the new DRG system and the changes in laws and regulations was made using professional or administrative channels which already existed in the hospital organizational scheme. Production of inhouse newsletters, circulation of reading files, and use of administrative or department meetings were also common techniques utilized to train medical records personnel as well as the rest of the hospital staff.

Content of Instruction

A review of the literature also revealed areas in which medical records personnel should be trained. These areas appear consistently

in the literature. For example, it is generally considered necessary that medical records personnel study and learn the language of the DRG system. This should include the many acronyms which are so numerous that at times "DRG-ese" becomes a foreign language. Mastery of the language of DRGs also requires a knowledge of certain key definitions and the understanding of certain concepts. Medical records personel who are not versed in this language will quickly become lost and will not be in a position to teach the medical staff and other administrative area personnel, nor will they be able to read available literature. Medical records personnel are expected to serve as boundary spanners for the organization, bringing vital new information and information about changes in the system into the organization. If medical records personnel are unable to comprehend the literature, they will not be in a position to perform this important task.

The literature contains many references to the necessity for medical records personnel to become familiar with certain computer software applications. Specifically, medical records coding personnel (coders) must become familiar with encoder systems, grouper systems, ICD-9-CM codes, related manuals, and computer software that support these subjects. Coders must know the main parameters of patient classification under the system of DRGs as advanced by the AMEDD. It is possible that the AMEDD version of DRGs will be so different from the system used by Medicare that coders may need additional technical training. This will remain purely speculative

until more is known about the system proposed by the AMEDD.

The DRG system as proposed by the DOD is still in the planning phases and has not yet evolved into a tailored AMEDD system. The evolution of the AMEDD DRG system must be monitored and incremental lessons must be taught to medical records personnel as they are integrated into the AMEDD strategy.

According to the literature, coders, for the most part, are knowledgeable in the fields of anatomy and physiology and medical terminology. They are exposed to these subjects in college or through experience and on-the-job training. It would, however, be beneficial for medical records administrators to test their coders and teach to their weaknesses in these areas.

The literature also talks about a feedback mechanism to monitor the progress of educational efforts and discusses the problem of continuing education. Suggestions include combining quality control and quality assurance monitors to reveal weaknesses and training to those weaknesses using inservices at the local and the hospital level when necessary.

Knowledge Level Survey

A knowledge level survey was constructed for this study using information gathered from a comprehensive literature review and interviews with national and inhospital medical records experts. Areas suggested and subsequently used to develop the survey included: general knowledge, PPS versus retrospective payment

system, purpose of PPS, scope of DRGs, coding, computers, VA system, and AMEDD plans (see Appendix F).

The survey was constructed for the purpose of determining the knowledge level of BAMC Medical Records personnel concerning the DRG system. Basic rules of developing survey items were followed (Cantor 1987). The method of construction of this survey was to use knowledge questions to ascertain the level of expertise in the field of DRGs held by the BAMC Medical Records staff.

When the test was administered, mail or other like procedures were not used so that respondents would not have the opportunity to look up answers or consult with colleagues. All questions were administered to the entire Medical Records staff. It was not expected that persons working in different Medical Records sections would proffer exactly the same answers. However, it was anticipated that the mean response would characterize the knowledge level of the personnel working in each section.

Where appropriate, the answer "I don't know" was explicitly included to reduce guessing and to indicate that "Don't know" answers were expected and acceptable. In some cases, an explicit choice of "Don't know" was not offered since successful guessing was unlikely. In addition to the inclusion of this type answer on the survey, those completing the survey were asked not to guess but rather to answer "I don't know" when unsure of the correct answer.

Explicitly mentioning "I don't know" as a possible answer category reduces the underlying threatening nature of knowledge

questions. Indicating that one is not familiar with all or most of the acronyms on a list could suggest that one is out of touch with the latest literature. There is a tendency for respondents to these types of questions to overclaim their knowledge of acronyms (Sudman and Bradburn 1982, 89, 96, 111, 113). This was controlled by asking additional questions as to what some of these acronyms represented.

Copies of this survey were submitted to medical records experts, who validated its contents and commented on the structure and the content. These experts were also asked to comment on the understandability and the appropriateness of questions included in the survey. Recommendations from these experts were reviewed and incorporated into the survey tested at Wilford Hall Medical Center (WHMC). The survey was further refined using recommendations and suggestions resulting from the WHMC test. The resulting knowledge level survey was used to determine the current knowledge level of Medical Records personnel at BAMC, the results of which are presented below.

The knowledge level survey constructed for this study was administered to BAMC Medical Records personnel on 28 April 1988. Those surveyed included 3 representatives from Medical Records management and administration, 5 coding personnel, and 13 other members of the Medical Records staff. The 13 others included employees from the Statistics, the Correspondence, the Legal, and the Quality Assurance Section.

The survey was graded by counting only positive answers.

Nothing was subtracted for wrong answers. Grades were recorded as a percentage of total points in the areas of Total Score, General Knowledge, PPS versus Retrospective Reimbursement, Puprose of DRGs, Scope of DRGs, Coding of Medical Record, Computers, Veterans Administration, and Plans of the Army Medical Department. Appendix G details subject areas and points awarded for each area. Total points possible were 107.

Based on results of discussions with medical records experts and results from a test of the survey at WHMC, a level-of-knowledge classification chart was constructed. Using this chart, all Medical Records personnel, management and administration, coding personnel, and all others were classified as to level of DRG knowledge (see Appendix H).

Appendix I presents a summary of data relevant to findings gathered from the administration of the knowledge base survey to BAMC Medical Records personnel. Figures from this summary indicate that there is a definite separation in levels of knowledge among management and administration Medical Records staff, coding staff, and all other Medical Records personnel. Management and administration personnel were the most knowledgeable, followed by coding personnel, then all others. These results were precisely what one might have expected.

An analysis was performed on these data using descriptive statistics. A mean, a minimum, and a maximum figure for each variable were calculated for the following categories of personnel:

All Personnel, Management and Administration, Coding Personnel, and All Other Personnel (see Appendix J).

Frequency distribution analyses were performed on Total Score means for the categories labeled as: All Personnel, Management and Administration, Coding Personnel, and All Other Personnel (see Appendix K). Finally, scores from each of the eight subject areas recommended by the literature and medical records experts were subjected to frequency distribution analysis (see appendices L-S).

Appendix J, the summary of statistics, indicates for the variable Total Score that, in all eight subject areas, average scores for all respondents are below the level of knowledge of DRGs described as Minimum. This observation alone points out the need for training in the Medical Records Department.

Further analysis of figures from Appendix J reveals that BAMC management and administration Medical Records personnel, on the average, fall into the category labeled in Appendix H as Good knowledge of DRGs. These numbers indicate that two out of three management and administration personnel scored in the Excellent level-of-knowledge category. It should be noted, however, that management and administration Medical Records personnel scored at or below the Minimum level-of-knowledge category in the areas of Purpose of DRGs, Scope of DRGs, and Plans of the Army Medical Department.

The coding staff did not score as well as the management and administration staff members. The mean total score attributed to

the coding staff was 46 points lower than the comparable figure for Management and Administration. The only subject area in which the coding staff demonstrated an above-minimum proficiency as a group was in the area of Purpose of DRGs. Coding personnel scored consistently lower in every subject area than did management and administration.

Scores recorded by personnel in the category All Other Personnel were lower than both Medical Records management and administration personnel and the coding staff. Personnel in the job category All Other Personnel scored higher than the coding staff only in the subject area of PPS versus Retrospective Reimbursement. All scores for the job category All Other Personnel are below minimum.

Frequency distribution analysis for each category of Medical Records personnel and for each subject area using All Personnel, Management and Administration, Coding Personnel, and All Other Personnel was also very revealing. For example, in Appendix K, it can be noted that 66.7%, or approximately two-thirds of all Medical Records personnel, fell below the minimum level of knowledge of DRGs. In other words, results of this survey indicate that only seven employees demonstrate the minimum acceptable level of knowledge of DRGs.

Further analysis indicated that total scores for all management and administration personnel are in either the good or the excellent range. On the other hand, however, all coders, except one, compiled

average total scores on all subjects which were below the minimum accepted level of understanding of DRGs. Only one of five coding staff scored higher than the minimally acceptable level. Similar observations revealed that 92.3% of the category All Other Personnel received an average total score below the minimum accepted level of understanding of DRGs.

An analysis of frequency distribution of each subject area gave a more detailed analysis and revealed the strengths and weaknesses of Medical Records personnel. Some examples are as follows: Appendix L demonstrates that 71.4% of all Medical Records personnel had an average score in the subject area of General Knowledge which was below the minimum acceptable level. Management and administration average scores in the area of General Knowledge of DRGs were good to excellent. Once again, coding personnel did not fare as well, with 80% of coders scoring below the minimum acceptable level. The category All Other Personnel had 84.6% of respondents score below the minimum in the area of General Knowledge.

In the subject area of PPS versus Retrospective Reimbursement, results were similar. Two-thirds of respondents in the All Personnel category received scores below the minimum. Management and administration staff all scored in the superior range. Coding staff had only one person score above the minimum, and 76.9% of All Other Personnel ranked below the minimum (see Appendix M).

A somewhat smaller 42.9% of the category All Personnel scored below minimum in the subject area Purpose of DRGs. Management and

Administration did fair compared to other scores. Coding Personnel did better in this subject than any other thus far, with 80% in the minimum understanding level, while the category All Other Personnel had 69.2% of respondents in the lowest recorded scoring level class, 0-9%. Only 30.8% of the category All Other Personnel achieved the minimum understanding level (see Appendix N).

The subject area Scope of DRGs had 57.1% of the category All Personnel score minimum or better understanding of DRGs, with two scoring in the superior range. Management and Administration had one each in the Good, Excellent, and Superior levels of understanding. Coding Personnel was evenly split from the lowest level to the Good understanding level. The category All Other Personnel, once again, had the lowest scores in the subject area (see Appendix O).

Management and Administration scored highest in the subject area of Coding of Medical Record, easily besting the Coding Personnel group. Eighty percent of the coding staff scored below the minimum level of understanding the DRG system in the subject area (see Appendix P).

Management and Administration once again scored Good, Excellent, and Superior in the area of Computers. It was noteworthy, however, that the coding staff did not do well in this area. The categories All Personnel and All Other Personnel did not fare well in this subject area (see Appendix Q).

All management and administration personnel achieved scores that demonstrate fair understanding of the Veterans Administration's

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methods of handling DRGs. Two of the coding staff attained the fair knowledge level, while the categories All Personnel and All Other Personnel did poorly (see Appendix R.

Once again, Management and Administration had the highest scores in the area of Plans of the Army Medical Department for DRG implementation. However, the scores were not good for any category of Medical Records personnel (see Appendix S).

The results of this survey were adequate to demonstrate the knowledge level of BAMC Medical Records personnel and to determine shortfalls in the areas which were recommended for training by medical records experts and the literature.

CHAPTER III

SUMMARY, CONCLUSION, AND RECOMMENDATION

This chapter consists of a summary, a conclusion, and the presentation of a recommended training plan for Brooke Army Medical Center Medical Records personnel in preparation for the implementation of the diagnosis-related group system.

Summary

Findings support the allegation that there was very little planning for the implementation of the prospective payment system when it descended upon the civilian community in 1983. Further, responsibility for training medical records personnel, and often the entire hospital staff, frequently fell upon the shoulders of medical records directors and their staff. For whatever reason, methods used for training medical records personnel were not the high technology methods one might expect. In fact, hi-tech methods were actually frowned upon by experts in the medical records field. The actual training of medical records personnel took a gradual and practical direction. Training for medical records staffs in the civilian sector and the VA has been an incremental process.

The content of instruction for medical records personnel recommended by the literature and by medical records experts is consistent. Basic knowledge must be assimilated in at least six basic

categories: (1) general knowledge, (2) PPS versus retrospective reimbursement, (3) purpose of PPS, (4) scope of PPS, (5) coding, and (6) computers. Because of their utility and their timeliness, the subject areas of Veterans Administration methodology and plans of the Army Medical Department were added by the author for the BAMC level-of-knowledge survey.

Results of the knowledge base survey constructed by the writer, reviewed by medical records experts, and tested at WHMC revealed three important observations. First, there was a distinct separation between the knowledge possessed by Medical Records management and administration personnel and the knowledge possessed by other categories of Medical Records staff. Second, scores on all subjects surveyed indicated a definite need for training. Finally, scores attained by the management and administration staff of the BAMC Medical Records Department indicated the potential for as many as three very strong trainers in the field of DRGs for both the Medical Records Department and the entire medical center.

Conclusion

This study has attempted to focus on the need for a training plan for BAMC Medical Records personnel to insure a smooth transition to the planned implementation of the DRG prospective payment system. Findings from this study indicate that BAMC Medical Records personel would benefit from a structured training plan for the implementation of DRGs.

There was evidence that some Medical Records personnel may require substantial training while others may need only minimal training. A review of statistics gathered for this research project provided evidence to support the conclusion that there are at least three members of the Medical Records management and administration staff who are capable of leading a training effort.

From these findings, it may be concluded that BAMC is well positioned to take the initiative and to seize upon the opportunity to be proactive by implementing the proposed training plan for Medical Records personnel as part of the strategic plan for implementation of DRGs.

Recommendation: A Proposed Training Plan

In response to the findings of this study, a training plan has been developed by the researcher. For this training plan to achieve success, there must be a recognition by all concerned that the DRG system, in some form, is inevitable and that BAMC administrative staff must seize the initiative. The proposed training plan is recommended for implementation by the BAMC Medical Records Department in preparation for transition to the DRG system.

Currently, a DOD/AMEDD DRG system does not exist. It is evolving. The training plan which is eventually adopted by the BAMC Medical Records Department should be incremental because, in all likelihood, the evolution of the DOD/AMEDD DRG system will be incremental. It will be necessary for this plan, or any plan which is

chosen for implementation, to be flexible. Periodic reexamination and updating will be necessary.

The proposed training plan for BAMC Medical Records personnel is presented below. The time line for the proposed training plan follows the time line used by the Health Services Command Clinical Investigation Agency Tri-Service Working Group for the proposed implementation plans advanced by the DOD/AMEDD (1987). Plans advanced by the DOD are stated, followed by proposed training plans for the BAMC Medical Records Department. The researcher is of the opinion that following the time line proposed by the DOD will insure application of the proper training at the proper time.

PROPOSED BROOKE ARMY MEDICAL CENTER

MEDICAL RECORDS TRAINING PLAN

Fiscal Year 1988

Department of Defense (DOD)/Army

Medical Department (AMEDD)

During Fiscal Year (FY) 1988, the DOD/AMEDD will be developing diagnosis-related group (DRG) software.

Brooke Army Medical Center (BAMC)

Responsibility and Planning

While the Department of Defense is developing software and

adapting it to present and future hardware, the Medical Records Director should seek responsibility and become involved in planning for DRG implementation. During this period, a hospitalwide DRG committee is likely to be established, and the Director of Medical Records will certainly be a member of this committee. If a DRG coordinator is appointed, instead of a committee, the Director of Medical Records or someone on the Medical Records staff should be considered for this position. The end of FY 1988 must be a time of planning.

Recommended Activities

During the latter part of FY 1988, the opportunity exists to establish a Medical Records DRG journal club. This journal club would be the beginning of training for Medical records personnel and possibly the entire medical center staff. It should be the responsibility of this journal club to publish a DRG newsletter and distribute it hospitalwide. The first newsletter should cover what is known as "industrial strength DRGs," that is, hard, cold facts, definitions, and acronyms--in short, the language of DRGs. Later editions should explain the philosophy and the concept of the DRG system, the reason why the military is using the system, and the impact this change will have on the hospital. Although this newsletter would be the responsibility of the Medical Records Department, input would certainly come from members of the DRG committee and other "champions" of the DRG cause in the hospital.

The preparations necessary to publish a monthly newsletter would train key people in the Medical Records Department. These preparations would further prepare them to train the remainder of the Medical Records Department staff. Further, the newsletter, when distributed, would prepare the staff of other sections of the hospital for the advent of the DRG system.

Medical Records staff meetings should be used to train Medical Records personnel for the coming DRG system. Presentations could be made from new readings, information from continuing education experiences, information received by higher headquarters, and information from other committees in the hospital.

National and local medical record association initiatives should be monitored. These associations were the driving force in the DRG educational effort during the implementation of the DRG system in the civilian sector. That material which applies specifically to the DOD/AMEDD DRG system must be extracted and presented to the BAMC Medical Records staff.

Fiscal year 1989

Department of Defense/Army Medical Department

Fiscal Year 1989 will find the DOD/AMEDD developing an integrated data system and implementing an allocation model. Software previously developed will be tested and installed. By the end of 1989, the services will be required to submit budget displays for FY 1990 that incorporate DRGs.

Brooke Army Medical Center

Training efforts begun in 1988 should continue into 1989. By that time, some, if not all, of the computer software planned by the DOD should be developed. It is anticipated that all inpatient facilities will have this software installed by the end of FY 1989. The BAMC Medical Records Department should request to become a test site for this new software. The training gained from testing new software which will be used DOD-wide would be an invaluable and cost-effective means of training the BAMC Medical Records staff. In addition to valuable training, BAMC would benefit from the prestige of being on the cutting edge of progress.

During 1989, it is anticipated that the DOD/AMEDD will have progressed to the stage where workshops and seminars specifically addressing the DRG system peculiarities will be available. The Medical Records Department should monitor the availability of these opportunities and insure attendance by as many staff members as the budget will allow. Those attending should be required to present what they learn at the next staff meeting of the BAMC Medical Records Department. Further, all new material should be shared with the DRG coordinator/committee so that it may find its way into all information channels within the medical center.

Fiscal Years 1990-1991

Department of Defense/Army Medical Department

During this "mid-term phase," the DOD/AMEDD will develop and add a decision support system software package, a utilization review system, and a precertification review to existing or planned hardware.

Brooke Army Medical Center

The mid-term phase will introduce increasingly technical computer software. It is imperative that the Medical Records Department staff take advantage of all training offered by the DOD/ AMEDD regarding these computer applications. The medical records department that does not keep up with the refinements of computer software packages cannot hope to fulfill its responsibility of assisting in the maintenance of the financial stability of its medical treatment facility.

During this phase of implementation, an understanding of financial terms will be needed by the Medical Records staff and staff in the rest of the hospital. A patient-level accounting system will be developed that will affect the entire medical center and especially the Medical Records Department. When this phase was reached in the civilian sector, some medical records departments were placed under the direct supervision of the department of finance. The option of placing the Medical Records Department under

the Comptroller Division will probably be considered by the DOD/ AMEDD during the mid-term phase, if not before.

Fiscal Year 1992 and Beyond

Department of Defense/Army Medical Department

During this phase, existing and planned decision support systems, utilization review systems, and precertification review applications will be further developed and enhanced.

Brooke Army Medical Center

Further and more advanced computer software training will be necessary during this phase. It is anticipated that the DOD/AMEDD will offer classes or workshops to bring medical records personnel up-to-date on the latest available software.

The importance of the training of Medical Records personnel will be felt during this period. If training has been successful, the "nuts and bolts" will be in place and the hospital will be well on its way to making the new DRG system work.

The establishment of an effective DRG committee or the appointment of a DRG coordinator in 1988 will also be felt during this phase. If the chosen DRG committee or coordinator (hopefully, participation will have come from the Medical Records Department) has done the job well, BAMC will be on a sound financial footing and will be in the best position to maintain its rightful place as a leader in providing tertiary care.

Summary of Training Plan Methodology

Training	Projected Year to Begin Using Methodology for Training			
	1988	1989	1990-91	1992+
Become involved as coordinator or member of DRG committee	X			
Organize DRG journal club; use existing channels of communication to disseminate information	X			
Organize DRG newsletter (this should be the responsibility of the Medical Records Department)	X			
Use Medical Records staff meetings to teach "DRG-ese" and developments	X			
Monitor national and state medical records associations for educational opportunities and new developments	X			
Pursue opportunity to become test site for software applications		X		
Hold workshops and seminars		X		
Provide advanced training on computer software			X	X

Feedback

The knowledge base survey constructed by the writer, or a modified form thereof, should be readministered to BAMC Medical Records personnel at least once a year to determine the effectiveness of the training plan as time progresses. In addition to periodic readministration of the knowledge base survey, there should be, throughout all phases of this training plan, periodic quality control and testing mechanisms devised that address problems and inadequacies of the system and the knowledge of the staff. Inservices should be developed to carry out local continuing education and to correct those problems.

Training Objectives by Fiscal Year

Fiscal year 1988

1. Medical Records personnel will develop a general knowledge of the DRG system, to include definitions, acronyms, and meaning of DRGs.

2. Medical Records personnel will be able to compare and contrast the retrospective payment versus the prospective payment system.

3. Medical Records personnel will be able to explain the scope of the DRG system.

4. Medical Records personnel will be able to explain the purpose of DRGs and the system's impact on the institution.

5. Training specific to coders will be taught to Medical Records personnel, if available this year.

6. New DRG-specific computer software will be implemented by Medical Records personnel, if available this year.

7. This year, the BAMC Medical Records Department staff must learn as much as possible from the Veterans Administration and remain abreast of DOD/AMEDD plans with regard to DRGs.

Fiscal Year 1989

1. Medical Records personnel will develop a good understanding of all new developments in general knowledge.

2. Coding personnel will study any new coding developments specific to the DOD/AMEDD system and become proficient in their use.

3. Medical Records personnel will take advantage of training with computer software developed thus far.

4. Medical Records personnel will conduct training in weak or problem areas discovered by feedback mechanisms.

Fiscal Years 1990-1991

Medical Records personnel will become proficient in techniques using advanced computer software applications.

Conclusion

There will not be a clear-cut separation, by year, as to which training objectives must be met. It will be necessary to meet some

objectives every year; other objectives, while listed in one year but not the next, will be met in both years. This summary of training objectives is intended as a guide, not as a rigid set of rules to be followed without exception. The rule must be: Remain flexible.

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APPENDIX A

DEFINITIONS

DEFINITIONS

Case mix--The relative proportion of the different types of illnessess or injuries a hospital treats.

Co-morbidity--A preexisting condition that will, because of its presence with a specific principal diagnosis, cause an increase in length of stay by at least one day in approximately 75% of the cases.

Diagnosis-related group (DRG)--A case-mix methodology that classifies inpatients into 467 mutually exclusive categories having similar clinical characteristics (e.g., diagnosis, type of surgical procedure, age, co-morbidity). Each DRG is expected to reflect groups of patients who consume similar products and/or services and, consequently, incur similar costs. DRGs reflect the degree of resource consumption by similar cases.

Grouper--Computer software that classifies each case into the appropriate DRG on the basis of diagnosis and procedure codes and sex, age, and discharge status.

ICD-9-CM--International Classification of Disease, Clinical Modification. A system for classifying diseases and operations to facilitate collection of uniform and comparable information. A reference which yields diagnoses and procedure codes. Used by the coding section to code a record.

Primary diagnosis--That diagnosis which accounts for the bulk of a hospital stay. (Some think that this should be used to determine the DRG rather than the principal diagnosis.) Used by the VA

in place of the principal diagnosis.

Principal diagnosis--That diagnosis which is determined on discharge to have been the principal reason for admission.

Prospective payment system--A system of payment in advance for a product or service in the hospital. The DRG system is a prospective payment system. The hospital knows in advance what the payment will be for the product or service it provides to the patient.

APPENDIX B

INTRODUCTION FOR HOSPITAL INTERVIEWS

AND DEMOGRAPHIC DATA SHEET

INTRODUCTION FOR HOSPITAL INTERVIEWS

I am the Administrative Resident from Brooke Army Medical Center. I am working on my Graduate Research Project to complete the requirements for the Master's degree in Healthcare Administration (MHA) from the United States Army-Baylor University Program. The questions I ask will give me an idea as to how you, in the civilian (Veterans Administration) sector, trained your medical records personnel in preparation for the implementation of diagnosis-related groups (DRGs). Also of specific interest to me is the content of training for medical records personnel in preparation for implementation of the DRG system.

Your assistance will help me to complete the requirements for the MHA degree, and success in this research project will make the transition to the DRG system smoother and more efficient for Brooke Army Medical Center. This interview will take approximately 45 minutes to complete.

DEMOGRAPHIC DATA SHEET

Name of Hospital:

Address:

Telephone Number:

Number of Operating Beds:

Teaching _____ (Y/N)

Type of Hospital: _____
      (For Profit/Not-for-Profit/Veterans Administration)

Person Interviewed:

Name:

Title:

Professional Degree:

Were you involved in DRG implementation? (1983-1985)

APPENDIX C

STRUCTURED INTERVIEW QUESTIONS FOR

INHOSPITAL MEDICAL RECORDS EXPERTS

STRUCTURED INTERVIEW QUESTIONS FOR INHOSPITAL

MEDICAL RECORDS EXPERTS

Responsibility

1. Who was responsible for training the medical records staff in your hospital before and during the implementation of the diagnosis-related group (DRG) system in 1983?

2. Who is responsible today for training new medical records staff and for continued competence training?

3. In your opinion, where do you think the responsibility for training medical records personnel should lie?

4. Do you have any recommendations for fixing the responsibility for training medical records staff now and in the future?

Planning

1. What planning did you do in preparation for training medical records personnel for the implementation of the DRG system?

2. Which medical records personnel were included in planning sessions for the implementation of DRGs?

3. Was any type of survey done to determine the level of knowledge held by the medical records department before implementation of the DRG system?

4. Did you perform a cost-benefit analysis of the methods available for training? What were the results?

5. Did you use a consultant to assist in planning for or actually training medical records personnel?

Methods

1. What methods were available to train medical records staff during the implementation of DRGs? What methods are available today?

2. What methods were used to train medical records personnel in preparation for the implementation of DRGs? What methods are being used today?

3. Were medical records personnel trained earlier than other personnel in the hospital?

4. Do you believe that you used the best methods available to train the medical records department for DRGs? If not, which methods do you believe you should have used?

5. Did you, during implementation, or do you now separate your medical records personnel into any kind of groups to facilitate training?

6. What training have you offered in the past or do you offer now to insure continuing competence with regard to DRGs?

7. Did you have to send medical records personnel out of hospital for training programs? Now?

8. What were your successes in training? (quantitative or subjective)

9. What problems did you encounter?

Content of Instruction

1. What was the content of instruction which was provided to medical records staff during implementatio.1 of DRGs? Exactly what were they taught?

2. What is the content of instruction provided to new employees today?

3. What is the content of instruction provided as continuing education to medical records staff?

4. In your opinion, what training must be provided to a medical records department in order to insure a smooth, efficient transition to the DRG system?

APPENDIX D

STRUCTURED TELEPHONIC INTERVIEW AND DEMO-

GRAPHIC DATA FOR ORGANIZATIONAL

MEDICAL RECORDS EXPERTS

STRUCTURED TELEPHONIC INTERVIEW FOR ORGANI-

ZATIONAL MEDICAL RECORDS EXPERTS

Introduction

Hello, I am the health care administrative resident at Brooke Army Medical Center (BAMC) in San Antonio, Texas. I am in the resident phase of the U.S. Army-Baylor University Master's Program, which leads to a Master's degree in Healthcare Administration.

This program requires that I do a Graduate Research Project. My project is to determine a training plan for medical records personnel for implementation of diagnosis-related groups (DRGs) by BAMC.

Part of the methodology involves interviewing experts in the field of medical records. You have a knowledge of medical records which I believe would help me in my research.

The interview consists of 10 questions. There are two or three questions in each of the following subject areas: Responsibility, Planning, Methodology, and Content of Instruction, all concerning training for medical records.

Would you consent to answering a few questions concerning medical records training?

First, let me record some demographic information:

Name:

Title:

Professional Organization:

Degree(s):

Responsibility

1. Historically, who was responsible for training medical records personnel for implementation of DRGs?

2. Today, who is responsible for training medical records personnel?

3. In the future, who should be responsible for training medical records personel?

Planning

1. Which medical records personnel, in your opinion, should be involved in planning for the implementation of DRGs?

2. Should a consultant be used to assist in planning for the training of medical records?

Methodology

1. Historically, what methods were available to train medical records personnel for implementation of DRGs?

2. Wnat methods are available to train medical records staffs today?

3. What methods are being used to insure continued competence with regard to DRGs?

Content of Instruction

1. What was the content of instruction/training which was provided to medical records personnel during the implementation of

DRGs in the civilian sector?

2. In your opinion, what training must be provided to medical records personnel in order to insure a smooth, efficient transition to the DRG system?

DEMOGRAPHIC DATA, ORGANIZATIONAL

MEDICAL RECORDS EXPERTS

Organization	Title	Person	Degree
Texas Medical Record Association	President	Linda Duelm	BS, Medical Records
American Hospital Association	Director, Central Office of ICD-9-CM	Mary Converse	BS, Medical Records
American Medical Record Association	Director, Professional Practice Division	Lou Ann Schraffenberger	BS, Medical Records
Texas Hospital Association	Coordinator, Allied Services	Nancy Strickland	None
Texas Medical Foundation	Director, Communication & Education	Carol McCauley	BS, Medical Records

APPENDIX E

DEMOGRAPHIC DATA FOR HOSPITALS

DEMOGRAPHIC DATA FOR HOSPITALS

Hospital	Type	Operating Beds
Humana Hospital 8026 Floyd Curl Drive San Antonio, TX 78213 Phone: 697-6300	For Profit	416
Santa Rosa Medical Center 519 W. Houston Street San Antonio, TX 78205 Phone: 228-2111	Not for Profit	598
Baptist Medical Center 111 Dallas Street San Antonio, TX 78286 Phone: 222-8431	Not for Profit	
Medical Center Hospital 4502 Medical Drive San Antonio, TX 78229 Phone: 694-2299	County, Not for Profit	540
South West Texas Medical Center 7700 Floyd Curl San Antonio, TX 78213 Phone: 692-4000	Not for Profit	487
Southwest General Hospital 7400 Barlite Boulevard San Antonio, TX 78224 Phone: 921-3441	For Profit	274
Audie L. Murphy Memorial Hospital 7400 Mertin Minter San Antonio, TX 78229 Phone: 696-9660	Veterans Administration	674

APPENDIX F

KNOWLEDGE LEVEL SURVEY

KNOWLEDGE LEVEL SURVEY

The purpose of this survey is to determine the level of knowledge of the diagnosis-related group (DRG) system in your hospital's medical records department. This survey was constructed using information gathered from a review of the literature, structured interviews with medical records experts in San Antonio hospitals, and telephonic interviews with national medical records experts. Suggestions and recommendations from these sources were translated into questions which will test your knowledge of the DRG system. The answers you give will assist in the determination of a training plan (DRGs) for medical records personnel.

DEMOGRAPHIC DATA

In which section of medical records do you work? _____

What is your position or job title? _____

Which college degrees have you earned? _____

Circle one if it applies:

    a. I am an accredited records technician (ART).

    b. I am a registered records administrator (RRA).

Does you job description include the coding of medical records?

    Yes_____   No_____

How many years of experience do you have in the job you are currently doing? _____

Have you recently attended a workshop or seminar dealing with any aspect of the DRG system?

    Yes_____   No_____

INSTRUCTIONS

Please circle the appropriate letter(s). Some questions may have more than one answer. The short answer questions can be answered in less than three or four sentences. "I don't know" is an acceptable answer. Please do not guess. If you do not know the correct answer, mark or write in "I don't know."

1. Which of the following are familiar to you as <u>terms commonly used in the DRG system</u>?

   a. Case mix

   b. ICD-9-CM

   c. Severity of illness

   d. Prospective payment

   e. Uniform Hospital Discharge Data Set (UHDDS)

2. Which of the following do you recognize as <u>acronyms frequently used in the DRG system</u>?

   a. HCFA

   b. TEFRA

   c. LOS

   d. PRO

   e. MDC

3. The letters in the acronym DRG stand for:

   a. Disease Ranked Groupings

   b. Diagnosis Related Groups

   c. Diagnostic Relevant Groupings

   d. I don't know

4. From the following list, choose which author(s) have been active in the evolution of the DRG system?

   a. Fetter

   b. Thompson

   c. Averill

   d. Breslin

   e. I have never heard of any of these people.

5. At which university was the first work with DRGs accomplished?

   a. Harvard

   b. Yale

   c. Duke

   d. Cornell

6. Circle the letter next to the statement which most closely defines case mix.

   a. The mixture of cases of litigation incurred by a hospital

   b. The number of social work cases handled by a hospital

   c. The number and type patients treated by a hospital

   d. I don't know

7. ICD-9-CM stands for:

   a. Institutional Coding Designation--9th Volume--Clinical Monitoring

   b. International Classification of Disease--9th Revision--Clinical Modification

   c. International Coding Documentation--9th Printing--Clinical Module

   d. I don't know

8. Explain retrospective reimbursement versus a prospective payment system.

9. Features of the DRG classification system include:

    a. A set reimbursement amount for each DRG

    b. Reimbursement for average wholesale costs incurred

    c. A peer review organization

    d. A completely retrospective payment system

    e. A prospective payment system

10. DRGs were eventually used as a prospective payment system for Medicare. For what purpose did the first researchers initially intend the DRG to be used? (two-word answer)

11. Which of the following phrases most accurately describes the purpose of the diagnosis-related group system in the civilian sector? (Mark one answer only.)

    a. Resource allocation

    b. Payment methodology for outpatient surgery

    c. Reimbursement methodology

    d. I don't know

12. Which of the following is not a primary reason for the implementation of the diagnosis-related system by the Army Medical Department?

    a. To reallocate resources

    b. To provide comparison between military and civilian hospitals based on DRGs

    c. To reduce spending by the military medical departments

    d. To obtain reimbursement

    e. I don't know

13. Which groups of people are likely to become involved in the implementation of the DRG system?

   a. Physicians

   b. Nurses

   c. Pharmacists

   d. Medical records personnel

   e. Administrators

   f. Building inspectors

   g. Logisticians

   h. I don't know

14. Impact of DRGs on the hospital include:

   a. The necessity to become more efficient

   b. The necessity to look carefully at expensive new technology

   c. Closer communications among hospital workers

   d. Possible changes in organizational structure

   e. Affect on the financial survival of the hospital

   f. None of the above

15. The principal diagnosis is the diagnosis which:

   a. After discharge is determined to have been most responsible for admission

   b. Is determined to have caused the use of the most resources

   c. After comparison with all others brings in the most money for the hospital

   d. I don't know

16. Please define primary diagnosis (short answer):

17. What is an <u>outlier</u>?

18. What is a <u>trim point</u>?

19. Using the Medicare DRG system, which of these pieces of information must be obtained by the medical records department in order to assign patients to a DRG?

a. Principal diagnosis

b. Number of outpatient visits last month

c. Operating room procedures

d. Complications

e. Diet restrictions

f. Co-morbidities

g. Discharge status

h. None of the above

20. Please write to right of each acronym what each set of letters stands for:

a. COPD--

b. MI--

c. UHDDS--

d. MDC--

e. TEFRA

f. HCFA--

g. PRO--

21. Which of these acronyms represents the prospective payment system used by the Veterans Administration hospital for in-patients?

    a. LOS

    B. TEFRA

    c. DRGs

    d. PIP

    e. I dont' know

22. The DRG system adopted for use by the Veterans Administration uses which type of diagnosis?

    a. Primary

    b. Frequent

    c. Principal

    d. I don't know

23. What is a DRG grouper?

24. What is an encoder?

25. The Army Medical Department (AMEDD) is planning to include an encoder into which of these systems?

    a. CHCS

    b. TRIPAS

    c. AQCESS

    d. DCCS

    e. I don't know

26. The acronym CHCS stands for:

   a. Complete Health Composite System

   b. Composite Health Care System

   c. Combined Heart Catheterization System

   d. Chronic Heart Composite System

27. What does the acronym MEPRS stand for?

   a. Military Examples of Prospective Repayment System

   b. Minor Expenses and Performance Retrospective System

   c. Medical Expense and Performance Reporting System

   d. Military Expense and Performing Report System

28. Matching: Place the correct number corresponding to one of the applications on the right in the space provided next to the matching application on the left. There is only one answer per system.

System	Application
DBMS-DSS_____	1. Accuracy, reliability
"UR" Tickler_____	2. Patient classification
Precertification_____	3. Concurrent care management
Grouper_____	4. Admission and surgical rate control
Encoder_____	5. Retrospective analysis

29. Congress had ordered DRGs to be implemented by the military medical departments by 1 October 1987. Instead, the Department of Defense has initiated a phased approach to implementation of the DRG system. The AMEDD plan will be phased in over how many years?

   a. Three

   b. Five

   c. Two

   d. Six

30. Matching: The Office of the Secretary of Defense, Health Affairs, plans to initiate certain activities between 1988 and 1992 to facilitate implementation of DRGs in the military. Please place the correct number corresponding to one of the activities on the right in the space provided next to the year in which this activity will occur on the left. More than one activity may match to a single date.

Year	Activity
1988_____	1. Limited allocation of resources using DRGs
1989_____	
1992_____	2. Composite health care systems will be available and will allow each medical treatment facility to link specific resource use with individual patients
	3. For resource allocation, this is a neutral year
	4. Data base refined and integrated
	5. DRG management software and related tools will be developed and procured to support medical treatment facility-level decision-making

APPENDIX G

VALUES ASSIGNED TO SURVEY QUESTIONS

BY SUBJECT

VALUES ASSIGNED TO SURVEY QUESTIONS BY SUBJECT

Subject Area	Points		Total No. of Questions
	Number	Percent of Test	
General Knowledge (Definitions, Acronyms, Recognition)	24	22	8
Prospective Payment System vs. Retrospective Pay	10	9	1
Purpose of Prospective Payment System	7	7	3
Scope of Diagnosis-Related Groups	8	8	2
Coding	26	24	6
Computers	21	20	6
Veterans Administration System	4	4	2
Army Medical Department Plans	7	7	2
Total	107	101*	30

*Total percentage when added is 101 due to rounding.

LEVEL OF KNOWLEDGE CLASSIFICATION

Based on survey test results and discussion with medical records experts, the researcher constructed the following knowledge level classification table:

Percentage Scored	Level of Knowledge for Diagnosis-Related Groups
40-49	Minimum
50-59	Fair
60-69	Good
70-79	Excellent
> 80	Superior

APPENDIX H

LEVEL OF KNOWLEDGE CLASSIFICATION

DATA, KNOWLEDGE BASE SURVEY,

BROOKE ARMY MEDICAL CENTER

These data represent the percentage scored by each of 21 respondents on all subjects (Total Score) and each respondent's score on the eight individual subject areas surveyed.

APPENDIX I

DATA, KNOWLEDGE BASE SURVEY,

BROOKE ARMY MEDICAL CENTER

KNOWLEDGE BASE SURVEY SCORES: ALL PERSONNEL

Respondent	TOTSCORE	GENKNOWL	PPSVRET	PURPOSE	SCOPE	CODING	COMPUTE	VA	AMEDD
1	72	79	100	43	56	65	90	50	43
2	65	67	100	86	100	54	62	50	14
3	70	75	100	43	75	62	81	50	43
4	27	38	0	86	50	15	29	0	0
5	21	25	0	43	63	77	19	50	0
6	41	54	50	43	38	38	29	50	29
7	14	13	0	43	19	23	10	0	0
8	12	21	0	43	0	4	19	0	0
9	3	29	0	0	13	4	0	0	0
10	6	4	0	0	6	19	0	0	0
11	17	13	100	0	0	19	0	0	0
12	17	29	0	43	50	4	10	0	0
13	21	33	0	43	44	23	9	0	0
14	42	50	100	43	100	23	19	50	0
15	5	0	0	0	0	19	0	0	0
16	30	38	0	0	56	12	42	0	71
17	16	17	0	0	13	23	29	0	0
18	2	0	0	0	0	8	0	0	0
19	17	17	0	0	25	23	29	0	0
20	9	8	0	0	0	23	10	0	0
21	36	46	100	43	88	29	0	0	0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
PPSVRET = Prospective Payment System vs.
　　　　　Retrospective Reimbursement
PURPOSE = Purpose of Diagnosis-Related
　　　　　Groups

SCOPE = Scope of Diagnosis-Related Groups
CODING = Coding of Medical Record
COMPUTE = Computers
VA = Veterans Administration System
AMEDD = Plans of Army Medical Department

KNOWLEDGE BASE SURVEY SCORES: MANAGEMENT AND ADMINISTRATION

Respondent	TOTSCORE	GENKNOWL	PPSVRET	PURPOSE	SCOPE	CODING	COMPUTE	VA	AMEDD
1	72	79	100	43	56	65	90	50	43
2	65	67	100	86	100	54	62	50	14
3	70	75	100	43	75	62	81	50	43

TOTSCORE = Total Score
GENKNOWL = General Knowledge
PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
PURPOSE = Purpose of Diagnosis-Related Groups
SCOPE = Scope of Diagnosis-Related Groups
CODING = Coding of Medical Record
COMPUTE = Computers
VA = Veterans Administration System
AMEDD = Plans of Army Medical Department

KNOWLEDGE BASE SURVEY SCORES: CODING PERSONNEL

Respondent	TOTSCORE	GENKNOWL	PPSVRET	PURPOSE	SCOPE	CODING	COMPUTE	VA	AMEDD
4	27	38	0	86	50	15	29	0	0
5	21	25	0	43	63	77	19	50	0
6	41	54	50	43	38	38	29	50	29
7	14	13	0	43	19	23	10	0	0
8	12	21	0	43	0	4	19	0	0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
PURPOSE = Purpose of Diagnosis-Related Groups
SCOPE = Scope of Diagnosis-Related Groups
CODING = Coding of Medical Record
COMPUTE = Computers
VA = Veterans Administration System
AMEDD = Plans of Army Medical Department

KNOWLEDGE BASE SURVEY SCORES: ALL OTHER PERSONNEL

Respondent	TOTSCORE	GENKNOWL	PPSVRET	PURPOSE	SCOPE	CODING	COMPUTE	VA	AMEDD
9	3	29	0	0	13	4	0	0	0
10	6	4	0	0	6	19	0	0	0
11	17	13	100	0	0	19	0	0	0
12	17	29	0	43	50	4	10	0	0
13	21	33	0	43	44	23	9	0	0
14	42	50	100	43	100	23	19	50	0
15	5	0	0	0	0	19	0	0	0
16	30	38	0	0	56	12	42	0	71
17	16	17	0	0	13	23	29	0	0
18	2	0	0	0	0	8	0	0	0
19	17	17	0	0	25	23	29	0	0
20	9	8	0	0	0	23	10	0	0
21	36	46	100	43	88	29	0	0	0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
PPSVRET = Prospective Payment System vs.
          Retrospective Reimbursement
PURPOSE = Purpose of Diagnosis-Related
          Groups

SCOPE = Scope of Diagnosis-Related Groups
CODING = Coding of Medical Record
COMPUTE = Computers
VA = Veterans Administration System
AMEDD = Plans of Army Medical Department

APPENDIX J

SUMMARY OF STATISTICS: KNOWLEDGE LEVEL

SURVEY, BROOKE ARMY MEDICAL CENTER

SUMMARY OF STATISTICS: KNOWLEDGE LEVEL

SURVEY, BROOKE ARMY MEDICAL CENTER

This statistical summary presents average scores expressed in percentages for each of the nine variables surveyed as achieved by: All Personnel, Management and Administration, Coding Personnel, and All Other Personnel. Minimum and maximum scores of each of the nine variables are also shown.

SUMMARY OF STATISTICS, KNOWLEDGE LEVEL SURVEY:
ALL PERSONNEL (N=21)

Subject Area	Variable	Mean	Minimum	Maximum
1	TOTSCORE	25.9	2.0	72.0
2	GENKNOWL	31.2	0.0	79.0
3	PPSVRET	30.9	0.0	100.0
4	PURPOSE	28.7	0.0	86.0
5	SCOPE	37.9	0.0	100.0
6	CODING	27.0	4.0	77.0
7	COMPUTE	23.2	0.0	90.0
8	VA	14.3	0.0	50.0
9	AMEDD	9.5	0.0	71.0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
 PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
 PURPOSE = Purpose of Diagnosis-Related Groups
   SCOPE = Scope of Diagnosis-Related Groups
  CODING = Coding of Medical Record
 COMPUTE = Computers
      VA = Veterans Administration System
   AMEDD = Plans of Army Medical Department

SUMMARY OF STATISTICS, KNOWLEDGE LEVEL SURVEY:
MANAGEMENT AND ADMINISTRATION (N=3)

Subject Area	Variable	Mean	Minimum	Maximum
1	TOTSCORE	69.0	65.0	72.0
2	GENKNOWL	73.7	67.0	79.0
3	PPSVRET	100.0	100.0	100.0
4	PURPOSE	57.3	43.0	86.0
5	SCOPE	77.0	56.0	100.0
6	CODING	60.3	54.0	65.0
7	COMPUTE	77.7	62.0	90.0
8	VA	50.0	50.0	50.0
9	AMEDD	33.3	14.0	43.0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
 PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
 PURPOSE = Purpose of Diagnosis-Related Groups
   SCOPE = Scope of Diagnosis-Related Groups
  CODING = Coding of Medical Record
 COMPUTE = Computers
      VA = Veterans Administration System
   AMEDD = Plans of Army Medical Department

SUMMARY OF STATISTICS, KNOWLEDGE LEVEL SURVEY:
CODING PERSONNEL (N=5)

Subject Area	Variable	Mean	Minimum	Maximum
1	TOTSCORE	23.0	12.0	41.0
2	GENKNOWL	30.2	13.0	54.0
3	PPSVRET	10.0	0.0	50.0
4	PURPOSE	51.2	43.0	86.0
5	SCOPE	34.0	0.0	63.0
6	CODING	31.4	4.0	77.0
7	COMPUTE	21.2	10.0	29.0
8	VA	20.0	0.0	50.0
9	AMEDD	5.8	0.0	29.0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
 PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
 PURPOSE = Purpose of Diagnosis-Related Groups
   SCOPE = Scope of Diagnosis-Related Groups
  CODING = Coding of Medical Record
 COMPUTE = Computers
      VA = Veterans Administration System
   AMEDD = Plans of Army Medical Department

SUMMARY OF STATISTICS, KNOWLEDGE LEVEL SURVEY:
ALL OTHER PERSONNEL (N=13)

Subject Area	Variable	Mean	Minimum	Maximum
1	TOTSCORE	17.0	2.0	42.0
2	GENKNOWL	21.8	0.0	50.0
3	PPSVRET	23.1	0.0	100.0
4	PURPOSE	13.2	0.0	43.0
5	SCOPE	30.4	0.0	100.0
6	CODING	17.6	4.0	29.0
7	COMPUTE	11.4	0.0	42.0
8	VA	3.8	0.0	50.0
9	AMEDD	5.5	0.0	71.0

TOTSCORE = Total Score
GENKNOWL = General Knowledge
 PPSVRET = Prospective Payment System vs. Retrospective Reimbursement
 PURPOSE = Purpose of Diagnosis-Related Groups
   SCOPE = Scope of Diagnosis-Related Groups
  CODING = Coding of Medical Record
 COMPUTE = Computers
      VA = Veterans Administration System
   AMEDD = Plans of Army Medical Department

APPENDIX K

FREQUENCY DISTRIBUTION, TOTAL SCORE,

BY JOB CATEGORY

FREQUENCY DISTRIBUTION, TOTAL SCORE: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-9	5	23.8	5	23.8
10-19	6	28.6	11	52.4
20-29	3	14.3	14	66.7
30-39	2	9.5	16	76.2
40-49	2	9.5	18	85.7
50-59	0	0.0	18	85.7
60-69	1	4.8	19	90.5
70-79	2	9.52	21	100.0

Class Limits	Frequency	. . . .
0-9	5	:=================================
10-19	6	:=======================================
20-29	3	:===================
30-39	2	:=============
40-49	2	:=============
50-59	0	:
60-69	1	:=======
70-79	2	:=============

FREQUENCY DISTRIBUTION, TOTAL SCORE: MANAGEMENT AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	0	0.0	0	0.0
60-69	1	33.3	1	33.3
70-79	2	66.7	2	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	1	:====================
70-79	2	:===

FREQUENCY DISTRIBUTION, TOTAL SCORE: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	00.0	0	00.0
10-19	2	40.0	2	40.0
20-29	2	40.0	4	80.0
30-39	0	00.0	4	80.0
40-49	1	20.0	4	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	2	:=================================
20-29	2	:=================================
30-39	0	:
40-49	1	:=================

FREQUENCY DISTRIBUTION, TOTAL SCORE: ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	5	38.5	5	38.5
10-19	4	30.8	9	69.2
20-29	1	7.7	10	76.9
30-39	2	15.4	12	92.3
40-49	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	5	:===
10-19	4	:==============================
20-29	1	:=======
30-39	2	:===============
40-49	1	:=======

APPENDIX L

FREQUENCY DISTRIBUTION, GENERAL KNOWLEDGE,

BY JOB CATEGORY

FREQUENCY DISTRIBUTION, GENERAL KNOWLEDGE: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	4	19.1	4	19.1
10-19	4	19.1	8	38.1
20-29	4	19.1	12	57.1
30-39	3	14.3	15	71.4
40-49	1	4.8	16	76.2
50-59	2	9.5	18	85.7
60-69	1	4.8	19	90.5
70-79	2	9.5	21	100.0

Class Limits	Frequency	. . . .
0-9	4	:====================================
10-19	4	:====================================
20-29	4	:====================================
30-39	3	:===========================
40-49	1	:=========
50-59	2	:=================
60-69	1	:=========
70-79	2	:=================

FREQUENCY DISTRIBUTION, GENERAL KNOWLEDGE: MANAGEMENT AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	0	0.0	0	0.0
60-69	1	33.3	1	33.3
70-79	2	66.7	2	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	1	:=================
70-79	2	:====================================

FREQUENCY DISTRIBUTION, GENERAL KNOWLEDGE: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	1	20.0	1	20.0
20-29	2	40.0	3	60.0
30-39	1	20.0	4	80.0
40-49	0	0.0	4	80.0
50-59	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	1	:=================
20-29	2	:===================================
30-39	1	:=================
40-49	0	:
50-59	1	:=================

FREQUENCY DISTRIBUTION, GENERAL KNOWLEDGE:
ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	4	30.8	4	30.8
10-19	3	23.1	7	53.8
20-29	2	15.4	9	69.2
30-39	2	15.4	11	84.6
40-49	1	7.7	12	92.3
50-59	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	4	:===
10-19	3	:===============================
20-29	2	:=================
30-39	2	:=================
40-49	1	:=========
50-59	1	:=========

APPENDIX M

FREQUENCY DISTRIBUTION, PROSPECTIVE PAYMENT

SYSTEM VS. RETROSPECTIVE REIMBURSEMENT,

BY JOB CATEGORY

FREQUENCY DISTRIBUTION, PROSPECTIVE PAYMENT SYSTEM VS.
RETROSPECTIVE REIMBURSEMENT: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	14	66.7	14	66.7
10-19	0	0.0	14	66.7
20-29	0	0.0	14	66.7
30-39	0	0.0	14	66.7
40-49	0	0.0	14	66.7
50-59	1	4.8	15	17.4
60-69	0	0.0	15	71.4
70-79	0	0.0	15	71.4
80-89	0	0.0	15	71.4
90-99	0	0.0	15	71.4
100-109	6	28.6	21	100.0

Class Limits	Frequency	. . . .
0-9	14	:=======================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	1	:===
60-69	0	:
70-79	0	:
80-89	0	:
90-99	0	:
100-109	6	:=================

FREQUENCY DISTRIBUTION, PROSPECTIVE PAYMENT SYSTEM VS.
RETROSPECTIVE REIMBURSEMENT: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	0	0.0	0	0.0
60-69	0	0.0	0	0.0
70-79	0	0.0	0	0.0
80-89	0	0.0	0	0.0
90-99	0	0.0	0	0.0
100-109	3	100.0	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	0	:
70-79	0	:
80-89	0	:
90-99	0	:
100-109	3	:=====================================

FREQUENCY DISTRIBUTION, PROSPECTIVE PAYMENT SYSTEM VS. RETROSPECTIVE REIMBURSEMENT: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	4	80.0	4	80.0
10-19	0	0.0	4	80.0
20-29	0	0.0	4	80.0
30-39	0	0.0	4	80.0
40-49	0	0.0	4	80.0
50-59	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	4	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	1	:===========

FREQUENCY DISTRIBUTION, PROSPECTIVE PAYMENT SYSTEM VS. RETROSPECTIVE REIMBURSEMENT: ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	10	76.9	10	76.9
10-19	0	0.0	10	76.9
20-29	0	0.0	10	76.9
30-39	0	0.0	10	76.9
40-49	0	0.0	10	76.9
50-59	0	0.0	10	76.9
60-69	0	0.0	10	76.9
70-79	0	0.0	10	76.9
80-89	0	0.0	10	76.9
90-99	0	0.0	10	76.9
100-109	3	23.1	13	100.0

Class Limits	Frequency	. . . .
0-9	10	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	0	:
70-79	0	:
80-89	0	:
90-99	0	:
100-109	3	:============

APPENDIX N

FREQUENCY DISTRIBUTION, PURPOSE OF DIAGNOSIS-

RELATED GROUPS (DRGs), BY JOB CATEGORY

FREQUENCY DISTRIBUTION, PURPOSE OF DRGs: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	9	42.9	9	42.9
10-19	0	0.0	9	42.9
20-29	0	0.0	9	42.9
30-39	0	0.0	9	42.9
40-49	10	47.6	19	90.5
50-59	0	0.0	19	90.5
60-69	0	0.0	19	90.5
70-79	0	0.0	19	90.5
80-89	2	9.5	21	100.0

Class Limits	Frequency	. . . .
0-9	9	:===================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	10	:=======================================
50-59	0	:
60-69	0	:
70-79	0	:
80-89	2	:========

FREQUENCY DISTRIBUTION, PURPOSE OF DRGs: MANAGEMENT AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	2	66.7	2	66.7
50-59	0	0.0	2	66.7
60-69	0	0.0	2	66.7
70-79	0	0.0	2	66.7
80-89	1	33.3	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	2	:=======================================
50-59	0	:
60-69	0	:
70-79	0	:
80-89	1	:==================

FREQUENCY DISTRIBUTION, PURPOSE OF DRGs: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	4	80.0	4	80.0
50-59	0	0.0	0	80.0
60-69	0	0.0	0	80.0
70-79	0	0.0	0	80.0
80-89	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	4	:=====================================
50-59	0	:
60-69	0	:
70-79	0	:
80-89	1	:==========

FREQUENCY DISTRIBUTION, PURPOSE OF DRGs:
ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	9	69.2	9	69.2
10-19	0	0.0	9	69.2
20-29	0	0.0	9	69.2
30-39	0	0.0	9	69.2
40-49	4	30.8	13	100.0

Class Limits	Frequency	. . . .
0-9	9	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	4	:=================

APPENDIX O

DISTRIBUTION FREQUENCY, SCOPE OF DIAGNOSIS-

RELATED GROUPS (DRGs), BY JOB CATEGORY

DISTRIBUTION FREQUENCY, SCOPE OF DRGs: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	6	28.6	6	28.6
10-19	3	14.3	9	42.9
20-29	1	4.8	10	47.6
30-39	1	4.8	11	52.4
40-49	1	4.8	12	57.1
50-59	4	19.0	16	76.2
60-69	1	4.8	17	80.9
70-79	1	4.8	18	85.7
80-89	1	4.8	19	90.5
90-99	0	0.0	19	90.5
100-109	2	9.5	21	100.0

Class Limits	Frequency	. . . .
0-9	6	:===
10-19	3	:=================
20-29	1	:=======
30-39	1	:=======
40-49	1	:=======
50-59	4	:=========================
60-69	1	:=======
70-79	1	:=======
80-89	1	:=======
90-99	0	:
100-109	2	:=============

DISTRIBUTION FREQUENCY, SCOPE OF DRGs: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	1	33.3	1	33.3
60-69	0	0.0	1	33.3
70-79	1	33.3	2	66.7
80-89	0	0.0	2	66.7
90-99	0	0.0	2	66.7
100-109	1	33.3	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	1	:=====================================
60-69	0	:
70-79	1	:=====================================
8-89	0	:
90-99	0	:
100-109	1	:=====================================

DISTRIBUTION FREQUENCY, SCOPE OF DRGs: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	1	20.0	1	20.0
10-19	1	20.0	2	40.0
20-29	0	0.0	2	40.0
30-39	1	20.0	3	60.0
40-49	0	0.0	3	60.0
50-59	1	20.0	4	80.0
60-69	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	1	:=====================================
10-19	1	:=====================================
20-29	0	:
30-39	1	:=====================================
40-49	0	:
50-59	1	:=====================================
60-69	1	:=====================================

DISTRIBUTION FREQUENCY, SCOPE OF DRGs: ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	5	38.5	5	38.5
10-19	2	15.4	7	53.9
20-29	1	7.7	8	61.5
30-39	0	0.0	8	61.5
40-49	1	7.7	9	69.2
50-59	2	15.4	11	84.6
60-69	0	0.0	11	84.6
70-79	0	0.0	11	84.6
80-89	1	7.7	12	92.3
90-99	0	0.0	12	92.3
100-109	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	5	:=================================
10-19	2	:===============
20-29	1	:========
30-39	0	:
40-49	1	:========
50-59	2	:===============
60-69	0	:
70-79	0	:
80-89	1	:========
90-99	0	:
100-109	1	:========

APPENDIX P

FREQUENCY DISTRIBUTION, CODING OF MEDICAL

RECORD, BY JOB CATEGORY

FREQUENCY DISTRIBUTION, CODING OF MEDICAL RECORD:
ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	4	19.0	4	19.0
10-19	5	23.8	9	42.9
20-29	7	33.3	16	76.2
30-39	1	4.8	17	80.9
40-49	0	0.0	17	80.9
50-59	1	4.8	18	85.7
60-69	2	9.5	20	95.2
70-79	1	4.8	21	100.0

Class Limits	Frequency	. . . .
0-9	4	:=====================
10-19	5	:==========================
20-29	7	:=====================================
30-39	1	:======
40-49	0	:
50-59	1	:======
60-69	2	:===========
70-79	1	:======

FREQUENCY DISTRIBUTION, CODING OF MEDICAL RECORD: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	1	33.3	1	33.3
60-69	2	66.7	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	1	:=================
60-69	2	:===================================

FREQUENCY DISTRIBUTION, CODING OF MEDICAL RECORD:
CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-9	1	20.0	1	20.0
10-19	1	20.0	2	40.0
20-29	1	20.0	3	60.0
30-39	1	20.0	4	80.0
40-49	0	0.0	4	80.0
50-59	0	0.0	4	80.0
60-69	0	0.0	4	80.0
70-79	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	1	:===
10-19	1	:===
20-29	1	:===
30-39	1	:===
40-49	0	:
50-59	0	:
60-69	0	:
70-79	1	:===

FREQUENCY DISTRIBUTION, CODING OF MEDICAL RECORD:
ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-9	3	23.0	3	23.0
10-19	4	30.8	7	53.9
20-29	6	46.2	13	100.0

Class Limits	Frequency	. . . .
0-9	3	:===================
10-19	4	:========================
20-29	6	:====================================

APPENDIX Q

FREQUENCY DISTRIBUTION, COMPUTERS,

BY JOB CATEGORY

FREQUENCY DISTRIBUTION, COMPUTERS: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	7	33.3	7	33.3
10-19	6	28.6	13	61.9
20-29	4	19.1	17	80.9
30-39	0	0.0	17	80.9
40-49	1	4.8	18	85.7
50-59	0	0.0	18	85.7
60-69	1	4.8	19	90.5
70-79	0	0.0	19	90.5
80-89	1	4.8	20	95.2
90-99	1	4.8	21	100.0

Class Limits	Frequency	. . . .
0-9	7	:==================================
10-19	6	:==============================
20-29	4	:====================
30-39	0	:
40-49	1	:======
50-59	0	:
60-69	1	:======
70-79	0	:
80-89	1	:======
90-99	1	:======

FREQUENCY DISTRIBUTION, COMPUTERS: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	0	0.0	0	0.0
60-69	1	33.3	1	33.3
70-79	0	0.0	0	0.0
80-89	1	33.3	2	66.7
90-99	1	33.3	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	1	:=====================================
70-79	0	:
80-89	1	:=====================================
90-99	1	:=====================================

FREQUENCY DISTRIBUTION, COMPUTERS: CODING STAFF (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	3	60.0	3	60.0
20-29	2	40.0	5	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	3	:=================================
20-29	2	:=========================

FREQUENCY DISTRIBUTION, COMPUTERS: ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	7	53.9	7	53.9
10-19	3	23.1	10	76.9
20-29	2	15.4	12	92.3
30-39	0	0.0	12	92.3
40-49	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	7	:===
10-19	3	:=================
20-29	2	:===========
30-39	0	:
40-49	1	:======

APPENDIX R

FREQUENCY DISTRIBUTION, VETERANS ADMINISTRATION (VA)

SYSTEM, BY JOB CATEGORY

FREQUENCY DISTRIBUTION, VA SYSTEM: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	15	71.4	15	71.4
10-19	0	0.0	15	71.4
20-29	0	0.0	15	71.4
30-39	0	0.0	15	71.4
40-49	0	0.0	15	71.4
50-59	6	28.60	21	100.0

Class Limits	Frequency	. . . .
0-9	15	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	6	:================

FREQUENCY DISTRIBUTION, VA SYSTEM: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	0	0.0	0	0.0
20-29	0	0.0	0	0.0
30-39	0	0.0	0	0.0
40-49	0	0.0	0	0.0
50-59	3	100.0	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	3	:=====================================

FREQUENCY DISTRIBUTION, VA SYSTEM: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	3	60.0	3	60.0
10-19	0	0.0	3	60.0
20-29	0	0.0	3	60.0
30-39	0	0.0	3	60.0
40-49	0	0.0	3	60.0
50-59	2	40.0	5	100.0

Class Limits	Frequency	. . . .
0-9	3	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	2	:=========================

FREQUENCY DISTRIBUTION, VA SYSTEM: ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	12	92.3	12	92.3
10-19	0	0.0	12	92.3
20-29	0	0.0	12	92.3
30-39	0	0.0	12	92.3
40-49	0	0.0	12	92.3
50-59	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	12	:=======================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	1	:====

APPENDIX S

FREQUENCY DISTRIBUTION, PLANS OF ARMY MEDICAL

DEPARTMENT (AMEDD), BY JOB CATEGORY

FREQUENCY DISTRIBUTION, PLANS OF AMEDD: ALL PERSONNEL (N=21)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	16	76.2	16	76.2
10-19	1	4.8	17	80.9
20-29	1	4.8	18	85.7
30-39	0	0.0	18	85.7
40-49	2	9.5	20	95.2
50-59	0	0.0	20	95.2
60-69	0	0.0	20	95.2
70-79	1	4.8	21	100.0

Class Limits	Frequency	. . . .
0-9	16	:=====================================
10-19	1	:===
20-29	1	:===
30-39	0	:
40-49	2	:=====
50-59	0	:
60-69	0	:
70-79	1	:===

FREQUENCY DISTRIBUTION, PLANS OF AMEDD: MANAGEMENT
AND ADMINISTRATION (N=3)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	0	0.0	0	0.0
10-19	1	33.3	1	33.3
20-29	0	0.0	1	33.3
30-39	0	0.0	1	33.3
40-49	2	66.7	3	100.0

Class Limits	Frequency	. . . .
0-9	0	:
10-19	1	:=================
20-29	0	:
30-39	0	:
40-49	2	:=========================

FREQUENCY DISTRIBUTION, PLANS OF AMEDD: CODING PERSONNEL (N=5)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	4	80.0	4	80.0
10-19	0	0.0	4	80.0
20-29	1	20.0	5	100.0

Class Limits	Frequency	. . . .
0-9	4	:==================================
10-19	0	:
20-29	1	:==========

FREQUENCY DISTRIBUTION, PLANS OF AMEDD:
ALL OTHER PERSONNEL (N=13)

Class Limits	Frequency	Percent	Cumulative	
			Frequency	Percent
0-9	12	92.3	12	92.3
10-19	0	0.0	12	92.3
20-29	0	0.0	12	92.3
30-39	0	0.0	12	92.3
40-49	0	0.0	12	92.3
50-59	0	0.0	12	92.3
60-69	0	0.0	12	92.3
70-79	1	7.7	13	100.0

Class Limits	Frequency	. . . .
0-9	12	:=====================================
10-19	0	:
20-29	0	:
30-39	0	:
40-49	0	:
50-59	0	:
60-69	0	:
70-79	1	:====